

EXTRA! 211 All-Time Best CD Ratings

P-32  
BEATLES

# Digital Audio & Compact Disc Review

COMPACT  
disc  
DIGITAL AUDIO

A WGE PUBLICATION MARCH 1987 \$2.95  
CAN \$3.75



## BOOM IN THE USA!



**First All-American**  
Compact Disc Plant



**50 All-American** Reviews

Alabama ★ Boston  
Bluegrass ★ Boston Pops  
Marsalis ★ Sondheim

## \$30,000 Dream System

### Upgrading Digitally: The Listening Room

### DAT Update: The Die is Cast

**NEW!**  
**Must-Read**

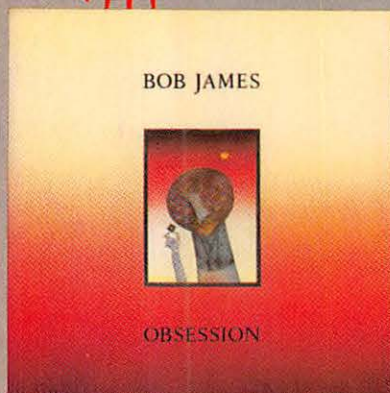
## Buyer's Guide

p. 97

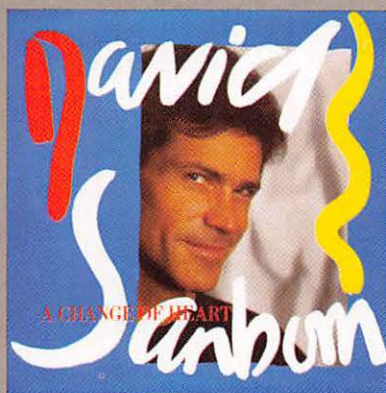




# GET JAZZZED.



Bob James  
Obsession



David Sanborn  
A Change Of Heart



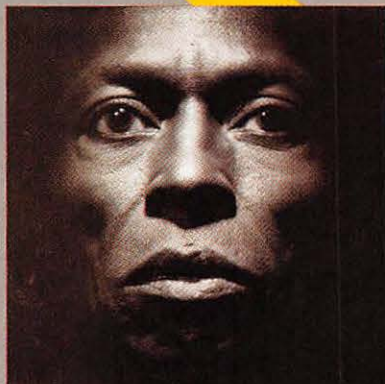
Mark O'Connor  
Stone From Which The Arch Was Made

# GET JAZZZED.

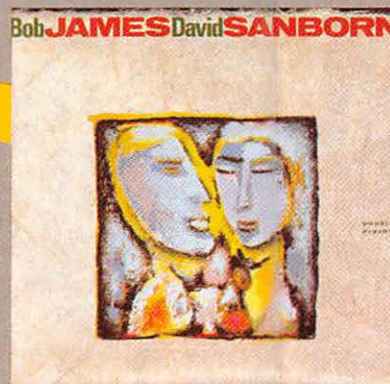
Madhouse  
8



Miles Davis  
Tutu



Bob James and David Sanborn  
Double Vision



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**Steve Winwood: Back In The High Life**  
Higher Love, more. Island 153271

**Tchakovsky, Symphony No. 6 (Pathétique)**  
Levine/Chicago Symphony Orchestra. RCA DIGITAL 153939

**Peter Gabriel: So • Sledgehammer**, In Your Eyes, Red Rain, etc. Geffen 114764

**Vivaldi, The Four Seasons • Pinnochio/English Concert.** Archiv DIGITAL 115356

**Linda Ronstadt: For Sentimental Reasons**, My Funny Valentine, etc. Asylum 154382

**Bach, Organ Works • Daniel Chorzempa** plays Toccata & Fugue in D Minor, more. Philips DIGITAL 115193

**Dire Straits: Brothers In Arms • Money For Nothing**, etc. Warner Bros. 114734

**Rimsky-Korsakov, Scheherazade • Vienna Phil./Previn.** Philips DIGITAL 115415

**ZZ Top: Afterburner • Stages**, Sleeping Bag, Velcro Fly, more. Warner Bros. 164042

**Bob James & David Sanborn: Double Vision.** Warner Bros. 123682

**Alabama: Greatest Hits • She And I, Why Lady Why, Feels So Right**, etc. RCA 120247



143811

**Kitaro: Tenku • Japanese New Age** master returns with all-new magic! Geffen DIGITAL 104859

**Robert Palmer: Riptide • Addicted To Love**, I Didn't Mean To Turn You On, etc. Island DIGITAL 133507

**Canadian Brass: High, Bright, Light & Clear • Masterpiece Theatre** theme, Air On A G String, more. RCA DIGITAL 144529

**Prince And The Revolution: Parade • Kiss**, Mountains, Girls & Boys, others. Warner/Paisley Park 140234

**Richard Stoltzman: Begin Sweet World** Amazing Grace, Air, Pie Jesu, others. RCA DIGITAL 150414

**Daryl Hall: Three Hearts In The Happy Ending Machine • Dreamtime**, Foolish Pride, Someone Like You, For You, etc. RCA 123691



125074



154381



113333



173824



115527

**Heart • What About Love? These Eyes**, Dreams, If Looks Could Kill, Nothin' At All, Never, etc. Capitol 144276

**Mozart, Symphonies Nos. 40 & 41 (Jupiter)**  
Chicago Symphony Orchestra led by James Levine. RCA DIGITAL 104810

**Bizet, Carmen (Film Highlights) • Julia** Migenes-Johnson, Plácido Domingo; Lorin Maazel conducts. Erato DIGITAL 154105

**The Judds: Rockin' With The Rhythm** Have Mercy, Grandpa (Tell Me 'Bout The Good Old Days), others. RCA 154265

**Mozart, Requiem • Schreier** leads the Leipzig Radio Choir & Dresden State Orchestra. Philips DIGITAL 115039

**John Cougar Mellencamp: Scarecrow** Lonely Ol' Night, Small Town, Rain On The Scarecrow, more. Riva 144512

**Pavarotti: Mamma • Title song**, Vieni sul mar, more. Arranged & conducted by Henry Mancini. London DIGITAL 115310

**Wagner, Orchestral Highlights From The Ring • Vienna Philharmonic Orchestra/Solti.** London DIGITAL 115426

**Kenny Rogers: They Don't Make Them Like They Used To • Title song**, Hold On To Love, After All This Time, more. RCA 151174



134541



115306

**Elvis Presley: Return Of The Rocker • King** Of The Whole Wide World, Return To Sender, Stuck On You, etc. RCA 164071

**Horowitz In London • Schumann, Kinder-scenen**; more by Chopin & Scriabin. RCA DIGITAL 162507

**Phil Collins: No Jacket Required • One** More Night, Sussudio, Don't Lose My Number, etc. Atlantic 120771



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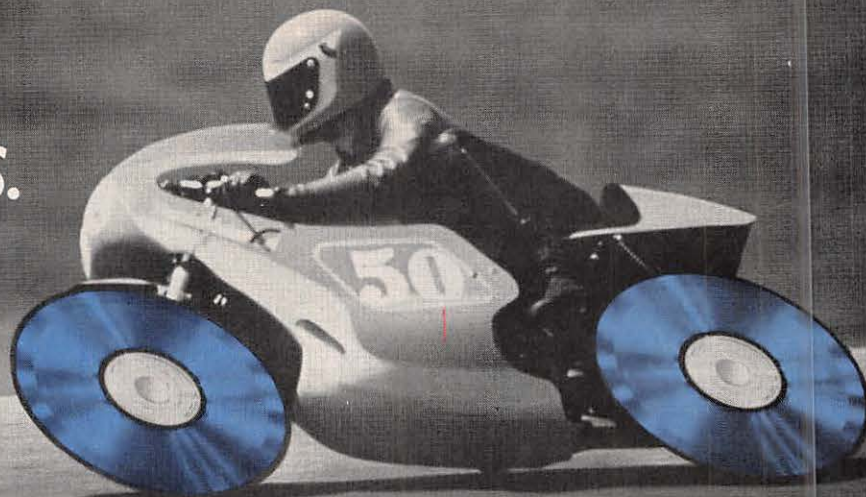
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BIG EVENTS  
ON CBS  
COMPACT DISCS.**



# MARCH

**5**

Esa-Pekka Salonen  
Nielsen  
Symphony  
No. 1  
Swedish  
Radio  
Symphony  
Orchestra



**8**

**12**

STEVE RAY VAUGHAN  
AND DOUBLE TROUBLE



**15**

**18**



RENAIA SCOTTO  
PACINI  
MADAMA BUTTERFLY  
PLACIDO DOMINGO  
WINELL KNIGHT/ANDREOLI  
THE JAS VON ORFESTRA  
LORIN MAZEL

2 CDs

## JUST RELEASED!

COLIN JAMES HAY "Looking For Jack"  
HIPSWAY "Hipsway"  
MOTT THE HOOPLE "Greatest Hits"  
THE CLASH "Sandinista!"  
SPIRIT "The Best Of Spirit"  
TEDDY PENDERGRASS "Greatest Hits"  
MAUREEN MCGOVERN "Another Woman  
In Love"  
MOZART: Piano Concertos Nos. 9 & 21  
Perahia  
BERNSTEIN: Candide  
(Original Cast Recording)



**22**

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### CD REVIEWS

#### 42 Pop/Rock

Jackson Browne's *The Pretender*, three from Boston, Bob Dylan and The Band's *Before the Flood*, Billy Joel, and Eddie Money

#### 54 Soundtracks

#### 56 Country/Western

Alabama's *The Touch*, plus four from Rosanne Cash

#### 58 Jazz

Wynton Marsalis' *J-Mood*, Eric Dolphy, Bob Mintzer, The Kenny Drew Trio, plus three from Spyro Gyra

#### 66 Classical

Gershwin's *Piano Concerto*, Mozart's *Requiem*, Rachmaninov's *Piano Concerto*, and more

#### 73 Original Cast

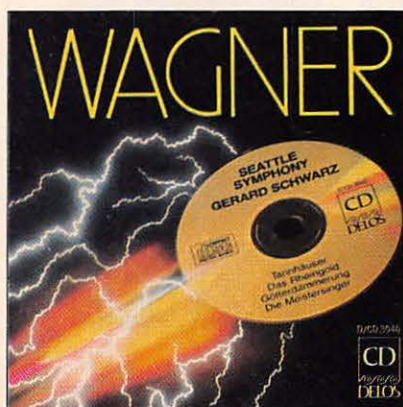
#### 96 Bluegrass

Ricky Skaggs and others

#### 103 Folk

#### 106 New Age

Albert Lee's *Speechless* and John Jarvis' *So Fa So Good*



### COVER

## CD Boom in the U.S.A.

Three and a half million American homes are presently equipped with CD players. By the end of 1987, that figure will soar to 6.5 million and buyers from coast to coast will snap up an estimated 85 million discs. This month's Made in the U.S.A. theme issue spotlights the American hardware and software companies contributing significant firepower to this explosive sonic boom.

### HARDWARE REVIEWS

#### 34 The ADS CD4:

#### American Technology With a German Accent



by Ken Pohlmann

An audio connoisseur's delight, the CD4 is a choice blend of international tastes: U.S. engineering, European design, and Japanese construction. Bon appetit!

#### 36 The Shure D6000:

#### A Respected Name Diversifies

by Ken Pohlmann

Shure, longtime maker of fine phono cartridges, enters the digital realm with a quality CD player.

#### 78 The Advent Legacy Loudspeaker:

#### American Traditional

by Ameer Eisenberg

When two young refugees from the lands of MIT and Harvard invented the acoustic suspension speaker, they began a legacy in hi-fi. Thirty years later, the Legacy is still going strong.

### FEATURES

#### 24 The Possible Dream

by David Vernier

For most of us, the ultimate hi-fi system is just a fantasy. But for a mere \$30,000, the dream of near-perfect stereo sound can come true.

#### 26 The American Way

by David Vernier

Break out the banners, wave the flags... the first all-American CD pressing plant is here! LaserVideo's new Alabama facility will produce 60 million CDs a year, and should help make this the land of CD plenty.

#### 32 Beatles Breakthrough

by Andrew Taylor

At long last! Four CDs. And this is just a taste of things to come!

#### 75 Cream of the Crop

Searching for perfection? Here it is, a guide to the 211 Compact Discs awarded the highest ratings by *Digital Audio* reviewers.

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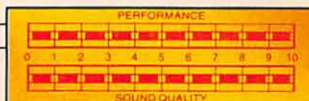
compiled by Lou Waryncia

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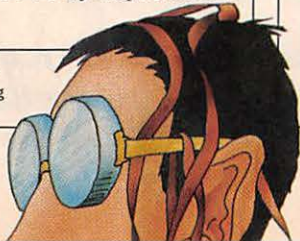
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More than 600 components, their vital statistics, and prices.



Cover photo by David Leifer. Antique games on pages 35 and 36 courtesy of The Game Preserve, 110 Spring Rd., Peterborough, NH 03458.



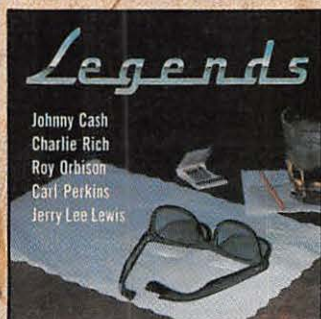


# IF YOU

# CAN

# BELIEVE

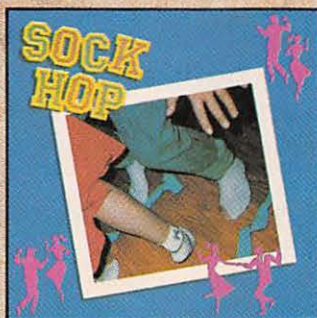
# YOUR EYES AND EARS



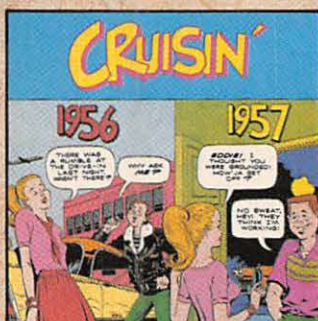
WHOLE LOTTA SHAKIN' GOING ON - Jerry Lee Lewis  
I WALK THE LINE - Johnny Cash / DOBY DOBY - Roy  
Orbison / BLUE SUEDE SHOES - Carl Perkins  
LONELY WEEKENDS - Charlie Rich



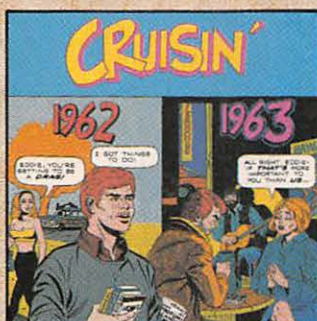
BOOM BOOM BOOM - John Lee Hooker / SLIM'S  
BLUES - Memphis Slim / HONEST I DO - Jimmy Reed  
BIG CAR BLUES - Lightnin' Hopkins / JELLY JELLY  
Roscoe Gordon



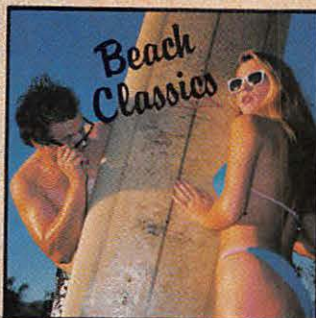
THE SHOOP SHOOP SONG (It's In His Kiss) - Betty  
Everett / TEQUILA - Champs / TWIST AND SHOUT  
The Isley Brothers / HEY LITTLE GIRL - Dee Clark  
DUKE OF EARL - Gene Chandler



THE GREAT PRETENDER - The Platters / SUZIE Q  
Dale Hawkins / SCHOOL DAYS - Chuck Berry  
LITTLE DARLIN' - The Diamonds / TUTTI FRUTTI  
Little Richard



HE'S SO FINE - The Chiffons / DENISE, DENISE - Randy  
and The Rainbows / HEY BABY - Bruce Channel / LET  
ME IN - The Sensations / THE WANDERER - Dion / I  
KNOW - Barbara George



G.T.O. - Ronny and The Daytonas / SURFER GIRL  
Beach Boys / SURFERS STOMP - Marketts / NEW  
YORK IS SUCH A LONELY TOWN - Tradewinds

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## EDITOR'S NOTE

# They Can Send a Man to the Moon...

As I watched the DC-9 roll up to the gate at the Nashville airport, I began my usual "pre-flight inspection." But this time, I was distracted by the big USAir logo on the side of the plane. Returning now to New Hampshire from Huntsville, Alabama, I'd just spent two days gathering material for the "Made in the U.S.A." cover story for this issue of Digital Audio. My heightened awareness of those "U.S.A." letters caused me to pay attention to signs, labels, and logos I normally wouldn't have noticed.

The phrase "made in the U.S.A." has a special meaning in Huntsville—the city where the U.S. space program began. From my hotel room window, I could see the exhibits outside the world's largest space museum: a space shuttle, Redstone and Atlas rockets, and the unbelievably huge Saturn V—the rocket that carried astronauts to the moon. And like the little DC-9, these spaceships proudly identified themselves by their own "U.S.A." logos. After a visit to the museum, I felt more than a little pride myself.

Another trademark, "Made in the U.S.A. by LaserVideo," represented the real reason I was in Huntsville: to witness the official opening of America's newest and soon-to-be-largest Compact Disc manufacturing plant. It's also the only wholly American-owned manufacturer of CDs. My observations and lengthy discussions with LaserVideo officials left me again overwhelmed with our American ability to make new technology work on a grand scale.

When I returned to New Hampshire, my positive "made in the U.S.A." feelings were dampened by a letter waiting on my desk. Its author expressed his concern that "most, if not all, classical music is now recorded in Europe. The major five [American] symphony orchestras are simply not to be heard when compared to the deluge of recordings utilizing second- through fourth-rate European orchestras. This serves to further the demise of the American symphony orchestra."

The situation this reader describes reminds me of the old "They can send a man to the moon, but..." routine. Without question, the American symphony orchestra is no longer a dominant force in the classical recording industry. When was the last time you heard a new recording by the New York Philharmonic?

The reason stems from a perfectly respectable American issue: money. Like everyone else in the working world, musicians justly feel they should receive a reasonable financial return for their services.

Unfortunately, classical musicians nev-

er have enjoyed the same level of public and private support as have those in other occupations; but for centuries, the ideals that motivated these artists to suffer the formidable frustrations of a musical career overshadowed the meager financial rewards. In today's world, however, musicians have fought for and won monetary concessions, making it possible for many symphony players to actually earn a living playing music.

The cost of this is high—more than many record companies are willing to pay. Contracts negotiated between American musicians' unions and symphony managers not only make recording sessions prohibitively expensive, they also place tight controls on rehearsals. Conductors will tell you how difficult it can be to get adequate time to prepare difficult and/or lengthy works, especially new works or works the orchestra hasn't played before. So how many new, complex, and/or lengthy works are likely to be recorded by an American orchestra?

Michael Emmerson, newly appointed president of RCA Red Seal, is a man who knows about recording. In a recent interview he told me, "The reason there aren't more recordings featuring American orchestras is that the costs are very high. And because of the costs, unless you make a record with broad appeal around the world, you're putting a noose around your neck."

James Conlon, an American conductor living and working in Europe, says the time constraints American musicians' unions place on rehearsal and recording schedules potentially can lead to disaster. "But," he says, "these circumstances have forced American orchestras to be more efficient than European ones. American orchestras generally learn their music much faster, but the question is how much, if any, better."

Meanwhile, we will hear less and less of Boston, New York, Philadelphia, Chicago, and Cleveland, and more of Berlin, Vienna, Gothenburg, Birmingham, and Rotterdam. Musically speaking, classical CD collectors aren't going to suffer; these European orchestras and their conductors are superb.

But what of these great American institutions? Will we, as would a museum, preserve our concert halls as (empty) monuments to what used to be? Or will we try to preserve the past by pressing and re-pressing the same old recordings in new formats and packages? Whatever, until I see positive changes, I'll place my own U.S.A. stamp on this issue: Unacceptable State of Affairs.

—D.C.V.

## Digital Audio & Compact Disc Review

### PUBLISHER/EDITOR

Wayne Green

### ASSOCIATE PUBLISHER

Dick Lewis

### EDITOR-IN-CHIEF

David C. Vernier

### MANAGING EDITOR

Mark Smith

### ART DIRECTOR

James Fletcher

### TECHNICAL EDITOR

Daniel Kumin

### SENIOR EDITOR

Andrew Taylor

### ASSOCIATE EDITOR

Eric Aldrich

### EDITOR AT LARGE

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### CONTRIBUTING EDITORS

Bryan Brewer, Lou Waryncia

### PHOTOGRAPHY

David Leifer

### WGE PUBLISHING, INC.

### VICE PRESIDENT, PUBLISHING

James Connell

### CHIEF FINANCIAL OFFICER

Richard P. Yee

### BUSINESS MANAGER

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### PRODUCTION COORDINATOR

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### SYSTEMS MANAGER

Sara B. Philbin

### COMPOSITIONAL DESIGN

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### GRAPHIC SERVICES

Richard Clarke, Mgr., Sue B. Flanagan, Dan Croteau, Debbie Smith

### SPECIAL PROJECTS EDITOR

Larry Canale

### ADVERTISING DIRECTOR

Tim Jameison

### ADVERTISING SALES

Penny Brooks, Deborah L. Fajans (800) 722-7785

### ADVERTISING SALES SERVICE

Lisa DiRusso, Manager, Barbara Tremblay

### CLASSIFIED ADVERTISING MANAGER

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### Editorial Offices

WGE Center  
Peterborough, NH 03458-1194  
(603) 525-4201

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## Another Penguin That Won't Fly

There will always be trailblazers and imitators, visionaries and Johnny-come-latelies. The Compact Disc world is no exception to the rule.

Being the first publication devoted exclusively to CDs, and therefore in the business of surveying the competition as it comes along, *Digital Audio's* editors couldn't help but smell something fishy when a new CD directory came on the market.

At first glance, "The Penguin Guide to Compact Discs, Cassettes and LPs" is imposing. With more than 1200 pages, weighing nearly two pounds, and claiming on its cover to include "ALL CURRENTLY AVAILABLE CDS," surely this is the authoritative volume on Compact Discs, right?

Well...not quite. Leafing through the Penguin guide we quickly noticed several troubling points. The most obvious is that when Penguin says "ALL," they mean all classical—and no pop, rock, jazz, country/western, or anything else. New Age? Forget it. Ditto for soundtracks, samplers and original casts.

Okay, perhaps you listen only to classical music and, after getting past the misleading cover hype, you can live with the book's exclusive angle. The next stumbling block comes in the note "For American Readers" appearing in the introduction. Here, the Penguin editors explain that American catalog numbers may not always be listed,

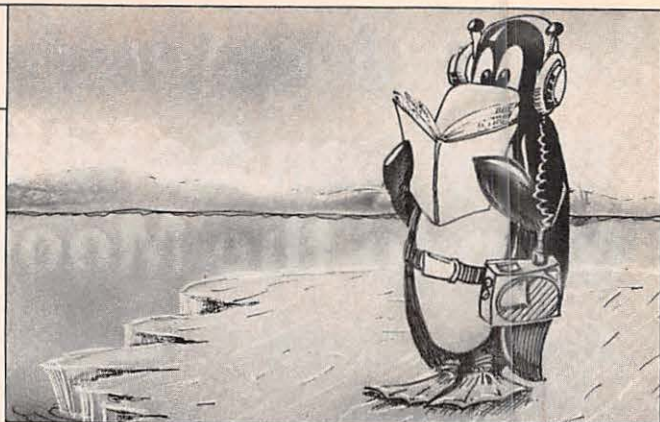
and that when they are listed they appear after the British catalog number, in brackets and sometimes accompanied by a code denoting "some difference" in the American release. Got that?

Furthermore, while Penguin's editors assure us they have "taken care to check catalogue information as far as is possible," they warn that because "all editorial work has been done in England there is always the possibility of error." U.S. readers are then asked to "take the precaution of giving their dealer the fullest information about the music and recordings they want." In other words, use this guide with confidence, but don't count on it.

Unless you bought the distinguished publisher's earlier book, "The Complete Penguin Stereo Record and Cassette Guide," even the keenest readers among you probably won't notice the trickiest aspect of this current guide. It bears all the earmarks of a thinly veiled remake.

Is there any difference between the old guide and the new one? Yes, the new includes CD commentary among its reviews. However, in addition to sounding quite similar to each other and often being limited to one or two sentences, the CD references appear with a curious frequency at the end of reviews, or the end of paragraphs. At best they seem to have been patched into existing paragraphs with little finesse.

For example, on J.S. Bach's



*Double harpsichord concertos Nos 1 and 2* (p. 22), Penguin concludes its review thusly: "The lively recording has very striking presence on CD, but is also very effective on LP and cassette." On page 23, the punctuating comment about a recording of Bach's *Triple clavier concertos* reads: "The sound quality has additional clarity in CD, though in both formats this record gives pleasure."

Further along, Verdi's "Macbeth" ends with, "Excellent, clean recording, impressively remastered for CD but sounding well in all three media, with CD adding a degree more presence and definition." Are these remarks beginning to sound strangely similar? Is the Pope a Catholic?

Of course, we can't say for sure that this new guide is just the old one with CDs patched in. We called the Penguin publicity offices to see if we could get a copy of the previous guide, but were told they didn't have any. "Why

do you want it?" a voice asked nervously. The voice couldn't even tell us when the first guide in question was published.

A call to our local bookstore established a publishing date of 1985, just about the time it became obvious that CDs were going to shoot through the roof. No doubt, Penguin's first effort was still fresh on bookstore shelves when the editors realized it was already dated. Not to worry: A year later they put out the "new" guide and corrected their oversight—sort of.

We can think of better ways to spend \$14.95 (the price of the Penguin guide). First, a donation to your local humane society (which makes you feel good inside, and it's tax deductible). Second, a perfect 10/10 CD, such as J.S. Bach's *Harpsichord Works*, Capriccio CDC 10034. Third, (we're biased, of course, but...) far and away your best bet is D.A.'s "Guide to Compact Discs," published by Bantam Books. And at just \$11.95, you'll have enough left over for the latest issue of *Digital Audio*...and a nickel to spare.

—M.S.

## Too Good To Be True?

Here we go again...yet another irresistible Compact Disc deal that has many of our readers on their guard. The name of the mail order firm is The Audio Connection, 501 Lucinda, DeKalb, IL 60015 (815-758-3791).

The come-on offer is CDs at only \$6.74 apiece (a price well below wholesale), including all postage and handling charges.

The gimmick is a requirement that the buyer pre-purchase a \$25 book of 50 "distributor recognized certificates." Then each time he orders a CD (for \$12.98) and attaches one of these coupons, he qualifies for another disc absolutely free. So actually, according to company literature, the consumer receives two CDs for \$13.48—or \$6.74 apiece.



Sounds great, right? On the other hand, perhaps it sounds a little questionable. With the wholesale cost of a CD between \$8 and \$9, you don't need a math degree to realize that anyone filling orders at such low prices is destined for the bankruptcy courts.

Contacting The Audio Connection, our reporter learned that the \$12.98 initial offer to a special mailing of 5000 names is no longer in effect. The ordering

cost has increased to \$17.98, plus postage and handling. Figuring in one 50-cent certificate, the new price of \$18.48 for two discs translates to \$9.24 each—still, it would appear to be a borderline business proposition.

That company turns out to be Sound-Tel International, Inc. of Irvine, California (714-955-1351), which sells franchising rights to firms such as The Audio Connection. According to its president, Darrell W. Piercy, offering CDs for \$6.74 apiece—or even \$9.24—might not seem to make a lot of business sense. But wait! His group of investors are prepared "to take a loss initially" because they're counting on future CD prices tumbling dramati-

cally, at which point the profits presumably will start rolling in.

Meanwhile, Sound-Tel appears to be profiting from the initial investments required to obtain franchises (which are sold nationwide) and from the bulk sale of coupon books to franchisees. Pointing to his years of selling LPs in a similar manner and Sound-Tel's "overall high standards," Piercy insists that all CD orders are promptly filled—with only occasional back order delays.

Rather than take a position on all these weighty financial maneuverings, we'd prefer to simply straddle the fence with a time-honored admonition: *Caveat emptor* (let the buyer beware).

—D.L.



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LORIN MAZEL

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## D-D-DAT's Not All Folks

Alright, so you're sick of puns on the word DAT (Digital Audio Tape). Well, recent indications show that they've only just begun. GRP Records has just transferred five of their titles from the digital masters onto Digital Audio Tape. The tapes are primarily for DAT machine demonstrations, but GRP—the jazz label featuring performers such as Dave Grusin and Lee Ritenour—has gone one step further. They have also specially designed the display boxes, the cassette cases, the tape labels, in short, the entire DAT package.

Why is this a big deal? Because it marks the first major commitment by any record label to the DAT format. "There's no doubt that we're living in a world of digital storage," says Larry Rosen, GRP's co-president and co-founder, "and the laser disc is only one form of that. The recordable tape format, like DAT, is a natural next step."

The rest of the recording industry, however, has been very reluctant—if not resistant—in taking that step. They claim that analog cassette recorders siphon off millions of dollars each year in the form of home recording and pirate tapes. So, in their eyes, DAT's crystal-clear digital recording capability could only mean even bigger headaches (see *The Last Word*, p.94).

But Rosen has another theory for record company resistance. "I think that the real reason is



that they don't want to upset the situation," he says. "[Most record companies] have their own plants to press records and certainly cassettes, which represent sixty-six percent of all their sales. They have [their production facilities] really locked up. The last thing that they want to have is another format."

The copying problem, he says, is more of a smokescreen. "We've been dealing with [copying] forever. There's nothing new about that. It's just the issue that is easiest to take to the public."

Other industry spokespeople worry that Digital Audio Tape will injure

the rapidly growing CD market. But Rosen believes that the high initial cost of DAT machines (around \$800 to \$1000) will minimize the problem. "I don't see DATs coming into the marketplace for ninety-nine dollars a piece and having tons of product out there so that all of a sudden somebody's going to go into the store and decide: Should they buy a DAT or a CD," he says. "I don't see that for at least three years."

The key word here is "upscale." The initial high price for the hardware and the low availability of pre-recorded material will make DAT appealing to only the upscale, gee-

whiz stereophiles—"the people who want to be the first on the block with a new toy," says Rosen. "Those people are going to want pre-recorded DATs of jazz and classical product, the same way it started with CD."

The upscale jazz market is GRP's bread and butter. Now we see why they want to be first.

But the big stumbling block for DAT is hardware. No one can pinpoint when the machines will be available to the consumer. Even Rosen—who has been working closely with the JVC Electronics Corporation—is in the dark. "We can't get a definitive answer to when this product will be on the market," he admits. "There's so much confusion about it." Best guesses now indicate that hardware will hit the mass market sometime this fall.

But Rosen, who wants GRP's entire catalog on DAT by that time, takes all of the problems in stride. Sure, there are risks in committing to DAT this early in the game. But just think of the payoff: a big headstart on packaging and manufacturing, a captive audience of audiophiles when the machines go on sale, and great press coverage for leading the pack.

"We're supplying the software for what I look at as home entertainment sections," says Rosen. "And whether people want to buy our product on LPs or cassettes or on CDs, DATs, or video laserdiscs and video tapes, I feel very strongly that we should be there. We have to be first, we're that type of a company."

—A.T.

## Desperate Measures

The devastating news had almost the same impact on some segments of the record industry as would an NFL linebacker blindsiding an opposing quarterback. During the first six months of 1986, shipments of LPs and EPs plummeted nearly 25 percent. At the same time, Compact Disc shipments soared by a staggering 149 percent over 1985 figures.

Desperate times clearly require desperate measures. The MBA at CBS Masterworks who came up with the innovative approach shown at left—a 34-inch LP to replace the standard 12-incher—won't talk for publication. We figure he convinced his superiors that the only

way to win back the quickly diminishing LP audience was by offering more music per album, just as CDs do. And this slab of vinyl unquestionably brings new meaning to the term "long playing record."

Sterling idea. Zubin Mehta conducting the New York Philharmonic in Beethoven's *Symphony No. 5 in C Minor, Op. 67* was also inspired. But we have just one question, CBS. Will you please tell us how the hell we play this behemoth? The dusty, obsolete turntable we found in our storeroom just can't handle it.

—D.L.





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348706. Wynton Marsalis—J Mood. Melodic invention! Much Later; Melodique; more. (Digital—Columbia)  
347492. Glenn Miller Orchestra—In The Digital Mood. (Digital—GRP)  
293597. Led Zeppelin—Houses Of The Holy. (Atlantic)  
350736. Rolling Stones—Rewind. (Rolling Stones Records)  
348987-398982. Linda Ronstadt—Round Midnight with Nelson Riddle and His Orchestra. (Asylum)  
339044. Mozart: Symphony No. 40 In G Minor. Bavarian Radio Symphony. (Digital—CBS Masterworks)

344622. Anita Baker—Rapture. #1 album. Includes smash hit Sweet Love; much more! (Elektra)  
319996-399998. Motown's 25 #1 Hits From 25 Years. (Motown)  
269209. Boston—Boston. (Epic)  
291278. The Doobie Brothers—Best of the Doobies. (Warner Bros.)  
273409. Horowitz Plays Favorite Beethoven Sonata. Vladimir Horowitz, Piano. (CBS Masterworks)  
346023. Genesis—Invisible Touch. (Atlantic)  
345777. Peter Gabriel—So. Includes Sledgehammer; In Your Eyes; more! (Geffen)

345785. Top Gun—Soundtrack. #1 album! (Columbia)  
346957. Steve Winwood—Back In The High Life. (Island)  
246868. Jim Croce—Photographs And Memories—His Greatest Hits. (Sajca)  
346536. The Monkees—Then And Now... The Best Of The Monkees. Includes the new hit: That Was Then, This Is Now; etc. (Arista)  
334391. Whitney Houston—Whitney Houston. Greatest Love Of All; etc. (Arista)  
336222. Dire Straits—Brothers In Arms. A #1 album! Money For Nothing; others. (Warner Bros.)

314443. Neil Diamond's 12 Greatest Hits, Vol. 2. (Columbia)  
308049. Creedence Clearwater Revival Featuring John Fogerty/Chronicle. Greatest hits. (Fantasy)  
343582. Van Halen—5150. (Warner Bros.)  
345553. Branford Marsalis—Romance for Saxophone. Top 10! English Chamber Orchestra. (Digital—CBS Masterworks)  
347054. David Lee Roth—Eat 'Em and Smile. Yankee Rose; Gain Crazy; more. (Warner Bros.)  
263293. Bolling: Suite For Flute & Jazz Piano. Rampa. Bolling. (CBS Masterworks)

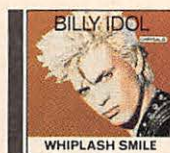
343327. Wynton Marsalis—Jolivet/Tomasi: Trumpet Concertos. Philharmonia Orchestra. (Digital—CBS Masterworks)  
339226. Gershwin: Rhapsody In Blue; Second Rhapsody; etc.—M. Tilton Thomas, Los Angeles Phil. (Digital—CBS Masterworks)  
326629. Bruce Springsteen—Born In The U.S.A. (Columbia)  
342097. Barbra Streisand—The Broadway Album. Somewhere; Something's Coming; more. (Columbia)  
341073. Steely Dan—A Decade of Steely Dan. Reeling In The Years; Hey Nineteen; more. (MCA)

345827. Bob James and David Sanborn—Double Vision. Joined by Al Jarreau, others. Includes Since I Fell For You. (Warner Bros.)  
343095. Philip Glass—Songs From Liquid Days. Lyrics by Paul Simon; David Byrne; etc. Featuring Linda Ronstadt. (CBS)  
219477. Simon & Garfunkel's Greatest Hits. El Condor Pasa; Bridge Over Troubled Waters; etc. (Columbia)  
316604. Tchaikovsky: 1812 Overture; Marche Slave; Beethoven: Wellington's Victory. Lorin Maazel, Vienna Phil. (Digital—CBS Masterworks)

343251. Bach: Goldberg Variations. Glenn Gould. (Digital—CBS Masterworks)  
287003. Eagles—Their Greatest Hits 1971-1975. Lyrin Eyes; Take It To The Limit; etc. (Asylum)  
346767. Johnny Mathis—Most Requested Songs. (Digitally Remastered—Columbia)  
337519. Heart. Top 10 Album. What About Love; Never; etc. (Capitol)  
321570. Beethoven: Symphony No. 5, Op. 67; Schubert: Symphony No. 8. Lorin Maazel, Vienna Phil. (Digital—CBS Masterworks)  
333286. Phil Collins—No Jacket Required. Album of the Year! (Atlantic)  
348649. The Pachelbel Canon And Other Digital Delights. The Toronto Chamber Orchestra. (Digital—Fantasy)



349324



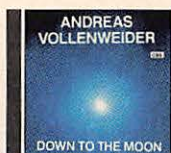
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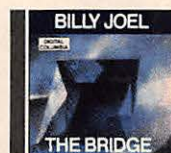
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For the man—or woman—who has everything but no place to put it, Custom Woodwork & Design now adds a "European"-style entertainment center to their line of modular, hi-tech furniture. Designed to hold not only CDs and hi-fi components, but liquor, wine glasses and, of course, your rear projection TV, the five-cabinet system can be configured in a variety of ways, and optional pieces may be added. The mirror-like black finish is made so by several coats of hand-rubbed polyurethane.

And if you're wondering where to put your speakers, CWD also offers handsome hardwood and hardwood-veneer stands in three heights: 9" for large floor-standing speakers; 15" for smaller floor-standing or bookshelf speakers; and 30" pedestals for mini-speakers.

Suggested retail prices:

Entertainment Center: \$4500

Speaker Stands: \$100 to \$120

Custom Woodwork & Design Inc.

7447 South Sayre Ave.

Bedford, IL 60638

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CWD's high-gloss black Entertainment Center integrates a rear projection TV, liquor cabinet, and just about everything except the kitchen sink.



Studer/Revox's new analog 24-track recorder—the A820—is said to rival digital recorders for sonic ability.

## Analog Lives!

Studer/Revox, the Swiss firm known for its industry-standard studio recording equipment (and for jewel-like home audio gear), is not letting go of the analog banner without a fight. Studer—the professional arm of the company—has announced an all-new 24-track analog studio recorder, the A820.

Studer's first entirely new multichannel machine in more than eight years, the A820 is fully convertible between 1- and 2-inch tape widths, offers three recording speeds, and can be configured with 8-, 16-, and 24-track headblocks.

But wait a minute—the real news on this analog recorder is digital. The A820 uses digital electronics at nearly every phase of its operation, via programmable transport operation, digital automatic audio alignment (of all 24 tracks simultaneously!), and even a serial communications bus to the recorder's metering system that allows the meters to be located as far as 300 feet away.

Studer intends the machine to compete with the best of today's digital multitrack studio equipment, in large part thanks to Dolby Laboratories' new SR (Spectral Recording) noise reduction system. Dolby SR can be integrated into the A820, as can the old standbys—Dolby A and Telcom noise reduction.

Studer maintains that with SR, the A820 does more than just compete with digital; it "may offer the best sound reproduction available from any recorder—analogue or digital."

Sure, we realize that the name of this magazine is "Digital Audio." But Studer has been at the root of many of our best recordings for so long that we think their commitment to analog recording deserves an open mind, at the least.

Suggested retail price: \$60,000  
(not including Dolby SR option)  
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Studer/Revox America, Inc.  
1425 Elm Hill Pike  
Nashville, TN 37210



In this century, there are but a few classical violinists whose artistry commands the accolades master and legend. The career of Cho-Liang Lin is a stunning indication that he is heir apparent to this rare honor. Already one of the world's most sought after and respected violinists, Lin's live and recorded performances have inspired *Stereo Review* to remark:

"Lin's playing has *everything*—the most gorgeous, pure tone, an unfailing sense of style, grace, flair and an obvious joy in making music."

CBS Masterworks is proud to present Cho-Liang Lin's newest and most important recording to date, Bruch's *Violin Concerto No. 1*; a masterful interpretation by Lin, a magnificent performance by the renowned Chicago Symphony Orchestra under the direction of Leonard Slatkin.

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## WORTH A LOOK

### Japanese Ceramics: Out of the Museum and into the Listening Room

Kyocera, the Japanese audio component purveyor, has long emphasized the importance of acoustic isolation, and not just for turntables playing old-fashioned LPs. Now, as isolation's importance for CD players is becoming more generally recognized, Kyocera has introduced the latest in a line of players employing modern ceramic technology to help dampen unwanted vibration.

The DA-710CX player employs so-called "Fine Ceramic" spacers in its chassis to isolate key components from vibration. The laser transport also sports zirconia-ceramic guide shafts that Kyocera claims can be machined to tighter tolerances than aluminum, yielding smoother tracking and superior stability.

Also featured in the new player are 16-bit, four-times oversampling for reduced analog filtering needs; optical coupling of digital and analog stages, said to prevent digital noise from leaking into the analog output; and a three-beam laser pickup. A full panoply of convenience and control features are present on the DA-710CX, among which are disc and track repeat, 16-track programmability, and a random sequence play mode. A 24-function wireless remote controller is included, and the new player



*Kyocera's DA-710CX CD player puts advanced ceramic technology to work, eliminating error-inducing vibration.*

can interface with Kyocera's RC-101/RT102 integrated remote control system, permitting control of an entire audio system throughout the house.

Suggested retail price: DA-710CX: \$800  
RC-101/RT102: \$250

Kyocera International, Inc.  
100 Randolph Road  
Somerset, NJ 08873

*Circle 91 on reader service card.*

### Multi-Play Progress From Pioneer

Pioneer Electronics (USA) Inc. claims improvements to both sonic performance and programming capabilities for their second generation of multi-play Compact Disc players.

Two new units—the PD-M60 and PD-M70—offer digital filtering, anti-vibration designs, and improved random play features. As many as 80 tracks can be programmed on the PD-M70, which also features a remote controller that incorporates an LCD screen to facilitate programming.

Suggested retail price: \$599 (PD-M70) \$499 (PD-M60)

Pioneer Electronics (USA) Inc.  
5000 Airport Plaza Drive  
P.O. Box 1720  
Long Beach, CA 90801

*Circle 92 on reader service card.*



*Pioneer's second generation of multi-play CD players bring jukebox-like programmability into your living room.*



*The Disc Library Model D1 by Sonrise Cabinet Systems stores up to 45 CDs.*

### Slick Disc Niche

Sonrise Cabinet Systems' newest CD storage unit, the Disc Library Model D1, neatly stores up to 45 discs. So you can spend less time searching for CDs and more time hearing them. Four friction-fit brass-coated pegs can be adjusted to separate music categories, further speeding search time. Up to three cabinets can be stacked on each other to hold a collection of 135 discs. The Model D1 is 7" high by 21 1/2" wide by 6" deep.

Suggested retail price: \$49.95

Sonrise Cabinet Systems  
13622 N.E. 20th, Suite F  
Bellevue, WA 98005 *Circle 90 on reader service card.*





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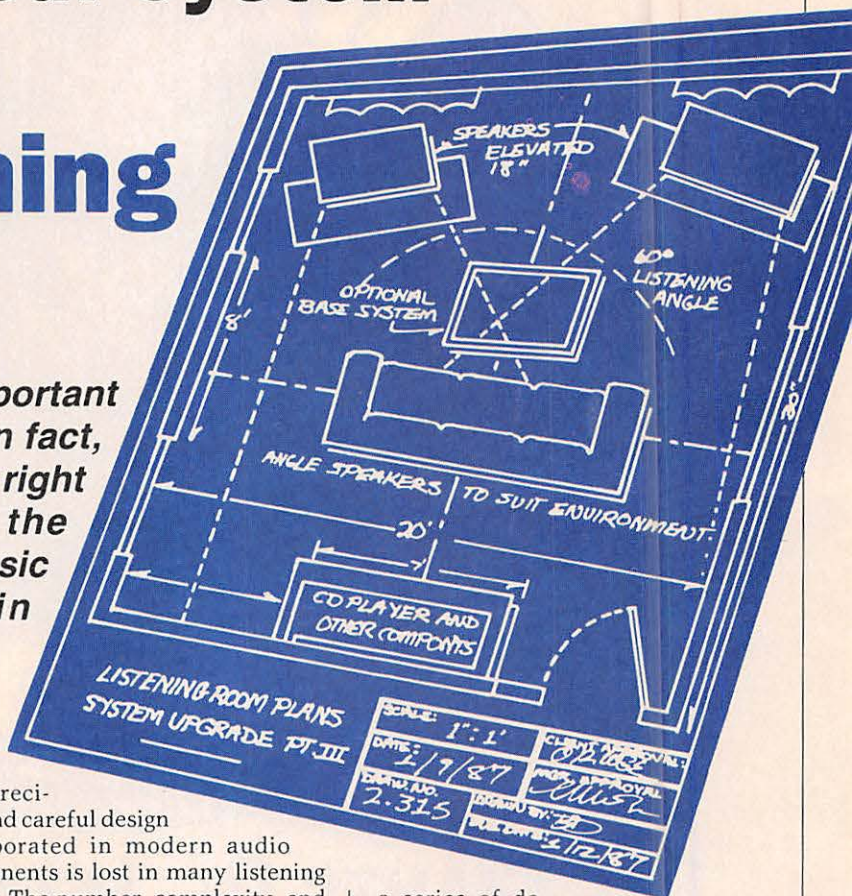


# Upgrading Your System

## Part III: The Listening Room

***You already have the most important component in your system. In fact, you're probably sitting in it right now. A little attention to the space where you listen to music can pay real dividends in sound.***

by Ken Pohlmann



**O**kay, so you got a CD player for Christmas. And it sounded great. But you read my January column and I persuaded you to buy a new amplifier. Then you read my February column and I persuaded you to buy new loudspeakers.

This month, let's take the final plunge into good listening: hire a contractor to bulldoze your living room and build a perfect listening room from scratch. While you're at it, you might want to line up a good divorce lawyer.

You may not be prepared to take such extreme measures, but the sad fact is that your listening room is the final link in the music reproduction chain. Its sonic behavior—somewhat akin to that of an acoustic musical instrument—can have a profound effect on the sound of your hi-fi system.

Your room's size, geometry, construction, and acoustical treatment all influence the quality of the final playback. In addition, the placement of your loudspeakers in the room—and to a lesser degree, the interconnection of the components comprising the stereo system—can be positive or negative influences.

Unfortunately, much of the scien-

tific precision and careful design incorporated in modern audio components is lost in many listening rooms. The number, complexity, and interrelationships of variables affecting room sound (including the type of music to be reproduced) make each listening situation unique, and prohibit sweeping rules of practice. Instead, let's take a look at the salient principles in setting up a listening room, with particular attention to acoustical considerations and loudspeaker placement.

### Space, Time, and Sound

In the absence of boundaries such as walls, the behavior of sound is relatively simple. In a free field—outdoors, for example—sound continues to radiate outward symmetrically from its source, much like ripples on a pond. In an enclosure such as a room, some sound energy is absorbed at the boundaries, and some is reflected back, creating the ambient information we hear as echoes and reverberation.

This reflected energy in a room influences our perception of any acoustical signal. Room boundaries act as sound "mirrors," reproducing

a series of delayed images of the original sound. When excessive, this conflicting information can inhibit the ear's ability to localize sounds—that is, to determine their apparent placement on the stereo soundstage.

On the other hand, when properly controlled, the effect not only adds considerably to our enjoyment of music, it is indispensable to it. An anechoic chamber (a room specially engineered to absorb *all* sounds) is a fine place to measure loudspeakers and microphones, because the behavior of the audio device can be observed independently from that of the room. But for listening to music, such a chamber is worse than useless because the ear doesn't hear anything approaching a "normal" acoustic space.

One environment in which absorption and reflection are carefully considered and manipulated to advantage is the concert hall. Suppose a violinist plays a note; the sound emanates in all directions. You eventual-





# Denon presents CDs from the land of Janáček, Smetana, and Dvořák.

Nowhere do they play Smetana's "My Country" like they play it in Smetana's country. And no one performs Dvořák like his fellow-countrymen. That's why Denon is proud to import Supraphon CDs from Czechoslovakia. Once hard to find, Supraphon CDs include definitive performances from Joseph Suk, the Smetana Quartet, and Václav Neumann conducting the Czech Philharmonic Orchestra. For memorable performances, remember "Supraphon." It's the Czech word for great music.

## SYMPHONIES

- 7244 BERLIOZ—Harold en Italie/Malý (viola) Jílek, Czech PHO (Feb. release)  
 7722 BERLIOZ—Symphonie Fantastique/Košler, Czech PHO  
 7702 DVOŘÁK—Symphony #9/"From the New World"/Neumann, Czech PHO  
 7703 DVOŘÁK—Symphony #8/Neumann, Czech PHO  
 7704 DVOŘÁK—Symphony #7/Neumann, Czech PHO  
 7705 DVOŘÁK—Symphony #6/Neumann, Czech PHO  
 7377 DVOŘÁK—Symphony #5/Neumann, Czech PHO  
 7442 DVOŘÁK—Symphony #4/Neumann, Czech PHO (Feb. release)  
 7668 DVOŘÁK—Symphony #3/Neumann, Czech PHO (March release)  
 7922 DVOŘÁK—Festival/Bělohlávek, Prague SO  
 CO1091 FIBICH—Symphony #1/Vronský, Brno St. PHO  
 CO1256 FIBICH—Symphonies #2, 3/Waldhans, Bělohlávek, Brno St. PHO  
 CO1150 JANÁČEK—Danube Symphony/Trhlík, Janáček PHO  
 7340-1 MAHLER—Symphony #9/Neumann, Czech PHO (2 CDs)  
 7307-8 MAHLER—Symphony #8/Neumann, Czech PHO (2 CDs)  
 7760 MARTINŮ—Symphonies #3, 6/Neumann, Czech PHO (March release)  
 7404 SUK—Asrael Symphony/Neumann, Czech PHO  
 7540 SUK—Symphony in E-Major/Neumann, Czech PHO (March release)

## ORCHESTRAL WORKS

- 7909 FIBICH—Spring, OP. 13, The Romance of Spring, OP. 23/Váňar, Prague RSO (Feb. release)  
 CO1018 JANÁČEK—Operatic Suites/Jílek, Czech PHO  
 CO1041 JANÁČEK—Sinfonietta, Taras Bulba/Neumann, Czech PHO  
 7831 RAVEL—Bolero, Daphnis et Chloé/Pešek, Czech PHO  
 7724-5 SMETANA—My Country/Neumann, Czech PHO (2 CDs)  
 7509 SUK—Symphonic Poem, Praga etc./Pešek, Czech PHO (March release)  
 7955 SUK—Symphonic Poem, Ripening/Neumann, Czech PHO (March release)  
 CO1030 SUK—Symphonic Poem, A Summer Tale/Pešek, Czech PHO

## CONCERTOS

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## CONCERTOS

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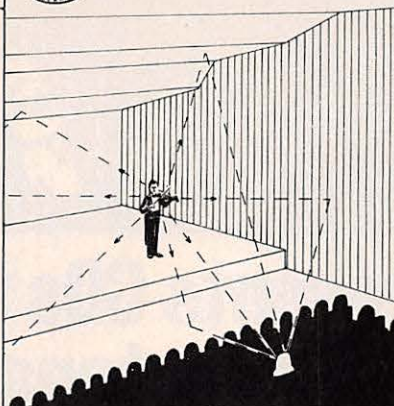


Fig. 1—Multiple path lengths determine the arrival time of direct sound and of the early and later reflections that make up the reverberant field.

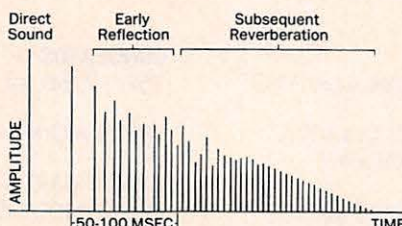


Fig. 2—The relative amplitudes (strength) and arrival times of the three components of room sound.

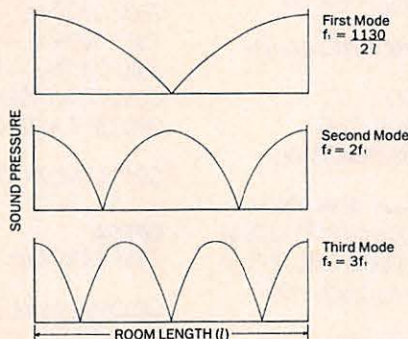


Fig. 3—Standing waves have a simple harmonic relationship to a room's length. Their fundamental is determined by the speed of sound (1130 feet per second) divided by twice the length.

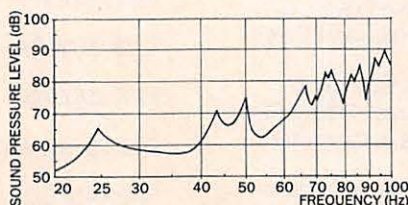


Fig. 4—The frequency response of a room with the dimensions 23' x 13' x 8'. In this graph, the important factor is not so much the amplitude of the response peaks, but rather their proximity to one another. Above about 100 Hz, the effect of standing waves is essentially nil because they are so close as to result in smooth response.

ly will hear all that sound, but at different times because it will follow different path lengths, as shown in Figure 1.

The sound you hear first is the direct sound coming from the violin. Next, 50 to 100 milliseconds (msec.) later, come first-order reflections—the sound of the note that has bounced off the stage floor, or proscenium. Sound from side walls or ceiling comes next, perhaps another 50 to 100 msec. later, from above or the sides. From behind comes sound from the back wall, as well as second-order reflections—sound of the note that has undergone two reflections. These later reflections can arrive up to a half-second later, or more.

At this point, only the most careful analysis can differentiate the various sounds of the original note; you are bombarded by a thicket of lower order reflections arriving closely together, from all directions. As the sound bounces around, it loses energy, and its amplitude slowly dies out. The result is a complicated set of related information including direct sound, early reflections, and reverberation, as shown in Figure 2. Of course, the brain makes no attempt to process each individual component. It simply amalgamates them all—without any conscious effort on our part—and tells us what kind of space we are in, even when we're blindfolded.

In addition, every enclosure—be it an ocarina or the Taj Mahal—has a resonant frequency. In the same way that a bottle will sound a resonant tone when you blow into it, any room will naturally augment certain frequencies. Sound waves from a source (such as a loudspeaker) combine with room reflections, reinforcing each other in some locations in the room, and partially canceling themselves in others. These reinforcing and reducing modes follow immutable laws of physics and exist according to a room's dimensions and geometry. They produce what are known as "standing waves"—sound waves with stationary high and low pressure regions at specific places in the room, as shown in Figure 3.

In other words, room frequency response (particularly at low frequencies, where standing waves are most pronounced) is a function of the listener's location in a room. For example, bass response is augmented around the edges of a room. A loudspeaker placed in a corner of a room

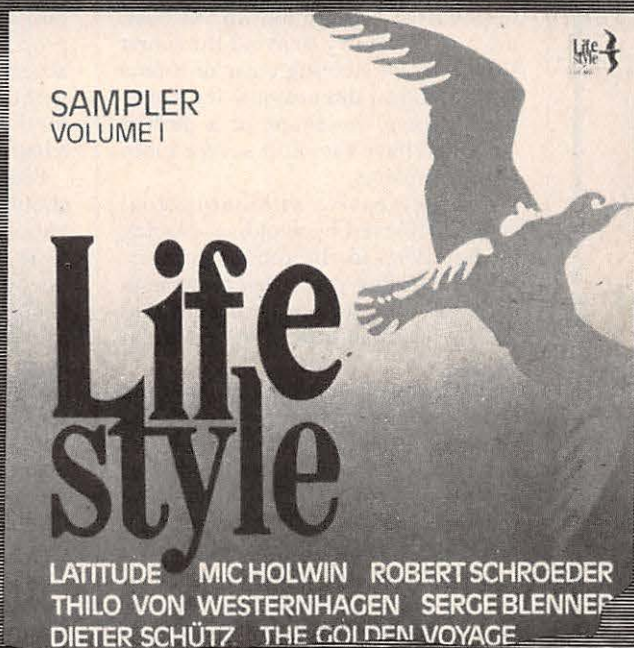


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will have greater output at certain bass frequencies than an identical loudspeaker placed in the middle of the same room, because the corner speaker will be able to more easily excite the room's standing waves. In short, loudspeaker (and listener) placement in a room can profoundly influence the tonal balance of the music you ultimately hear.

The dimensions of a room establish a set of "room modes" in which sound levels are increased and decreased over the room's area. For example, Figure 4 shows the frequency response of a rectangular room 23 feet by 13 feet by 8 feet tall. Clearly, the room's frequency response is far from flat. The problem introduced by room modes is particularly acute for low frequencies; as frequency increases, the room modes occur more closely together, and a smoother response from point to point usually results.

**A Room of One's Own?**

Room modes can never be entirely eliminated. Moreover, few audiophiles—digital or otherwise—have the luxury of designing their listening rooms from the ground up. At best, most of us can try to avoid the worst situations by steering clear of rooms with identical dimensions, for example. A room the shape of a perfect cube will have the most severe room mode problems.

Another easily attainable goal can be achieved by avoiding placing loudspeakers in the room's corners. While boosting some perceived bass sounds, this serves to accentuate the undesirable effects of the room modes.

Other considerations in listening room design include room size and geometry. Again, while most of us have little choice, at least we can know what to wish for. A listening room should be fairly large; this lowers the frequency of the room modes and yields a better sense of ambience. If possible, a listening room should have a volume of at least 1500 cubic feet.

Although difficult, avoid parallel walls. They can create a flutter echo in which sound is slapped back and forth producing distinct, regular echoes. Splayed (angled) walls are much better. So are angled ceilings. If by a happy coincidence you are planning a new suspended ceiling for your listening room, try to have it installed so that one end is a foot or two higher

than the other. (Your ceiling contractor will hate you: It goes against everything he's been taught.)

Also avoid room geometries that might tend to focus the sound, such as a concave wall shape. The result would be uneven amplitude distribution through the room, yielding both acoustical hot spots and dead spots.

No matter what the size, shape, and geometry of a room, it can usually be improved with some thoughtful acoustical treatment. A balance of sound reflectors and absorbers can help problems such as resonance and flutter echo. They will also help to create a smooth reverberation characteristic. Room irregularities and furnishings serve to reflect the sound and diffuse it, breaking up hot spots and echoes. For example, a flutter echo between two walls can be partly dispersed with reflectors like shelves or absorbers such as wall hangings.

Sound absorbers work in another way to control sound; they absorb sound energy. Carpeting and heavy drapes will help absorb mid and high frequencies. Wood paneling mounted on furring strips and frame construction absorb low frequencies. When properly balanced in a listening room, absorbers should provide a smooth reverberation decay—the length of time for the last echoes to die out—of about a half-second.

Finally, a good listening room should have adequate sound isolation to prevent unwanted sounds (to you) from entering, and unwanted sounds (to others) from leaving. Absorbers have relatively little isolation effect. Rather, solid construction is required, such as double-studded or concrete walls. Obviously, it helps if the listening room is physically separated from noisy rooms such as garages, and quiet ones like bedrooms.

But back to reality. If you are like most audiophiles, you are lucky to have a room—any room—to call your own. Furthermore, it is probably also a living room, bedroom, or even a dormitory room, so extensive compromises are usually required.

With a little effort and a lot of trial and error, most rooms can be made to sound pretty good, or at least substantially better, depending on how the sound system—particularly the loudspeakers—are installed.

Speaker placement is dictated by the loudspeakers and the room itself. Since there is no magic for-





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mula for determining the ideal placement, trial and error is the rule. A few general tips, however, can provide a good point of departure.

In a rectangular room, loudspeakers should be placed along the short dimension. This will aid in creating the proper stereo perspective. Position the loudspeakers equidistant from your listening area, and in accordance to the manufacturer's suggestions. Depending on the design, that might mean on the floor, off the floor on a stand, on a bookshelf, against the wall, away from the wall, or some other combination. At the same time, don't be afraid to try non-standard placements. You can't possibly hurt anything (unless you drop a speaker from your stepladder) and occasionally surprising synergies can be discovered.

The distance between loudspeakers should be determined by your distance from them. In general, the loudspeakers and your listening position should form a rough isosceles triangle, with angles of about 60 degrees all around, as shown in Figure 7. Although room geometry and usage might unavoidably dictate otherwise, try to place both loudspeakers in similar types of locations. For example, put both along a flat wall, or away from the wall. If possible, the tweeters should be at ear level. Angle the loudspeakers to face your listening area, or even a little more sharply in-

$$f = \frac{c}{2} \left[ \left( \frac{p}{l} \right)^2 + \left( \frac{q}{w} \right)^2 + \left( \frac{r}{h} \right)^2 \right]^{1/2}$$

where f = frequency of mode (in Hz)  
 c = speed of sound (1130 feet/sec)  
 l = room length  
 w = room width  
 h = room height  
 p, q, r = integers 0, 1, 2, 3... etc. (see sidebar below)

Fig. 5—An equation for determining the room modes, and thus the standing waves for any room. A home computer and a spreadsheet program are handy for this kind of thing. If you don't have one of those, find a tenth-grader to help you out.

ward. Don't be afraid to try something different—you can always put it back the way it was.

#### If at First You Don't Succeed...

Once an approximate position is determined, power up the system and do some careful listening to determine your final loudspeaker placement. First, check to make sure your speakers are wired in phase; the positive and negative terminals on your amplifier must be connected to the corresponding terminals (+ and -, red and black) on your loudspeakers. By crossing them on one loudspeaker while having them correctly attached on the other, phase distortion will result. Deficient bass response is one symptom.

Also check for correct *absolute* phase. This means making sure that the positive amplifier terminals are connected to the actual positive loudspeaker terminals, rather than vice versa on both sides. Studies have shown that incorrect absolute phase, which results in the attacks of sounds

commencing with an evacuation rather than a compression of the air, can actually affect our perception of what we call musical transients—drums, cymbals, plucked strings and similar quick sonic elements.

#### Wired for (Better) Sound

Now check for standing wave problems that establish areas of loud and soft

bass response throughout the room. Crank up your bass control, play a pink noise source through your system—use a special noise generator or use the hissing noise found in between FM radio stations—and walk around the room listening for changes in bass level. Now move your loudspeakers a foot or two and listen again. Keep trying until bass response

MODE NUMBER	INTEGERS p q r	MODE FREQUENCY (Hz)
1	1 0 0	24.5
2	0 1 0	43.5
3	2 0 0	49.1
4	1 1 0	49.9
5	2 1 0	65.5
6	0 0 1	70.6
7	3 0 0	73.7
8	1 0 1	74.7
9	0 1 1	82.8
10	3 1 0	85.5
11	2 0 1	85.9
12	1 1 1	86.4
13	0 2 0	86.7
14	1 2 0	90.2
15	2 1 1	96.3
16	4 0 0	98.3
17	2 2 0	99.7
18	3 0 1	102.0

Fig. 6—Sample room mode calculations for a 23' x 13' x 8' room.

## Your Room Numbers

There is no solution to the problem of room modes, but the effect can be minimized by choosing a room's relative dimensions so as to distribute the modes as evenly as possible. While I'm not seriously suggesting you move your walls, you might find a bit of study enlightening—and even helpful—in optimizing your system.

Those of you who bought a home computer and a spreadsheet program to "get control of your home budget" a year ago, but never got around to it (sound familiar?), take notice. This kind of calculation is what spreadsheets are made for. They are trivial to

solve that way, and a bit tedious to work with paper and pencil.

For rectangular rooms, the equation in Figure 5 can be used to calculate your room modes. The variables p, q, and r are integers; they specify the mode of vibration to be calculated. For example, when p = 1, q = 0 and r = 0, the equation results in the mode (1,0,0); this is the room's first length axial mode—the first harmonic standing wave over the length of the room. Similarly the room's first width axial mode is (0,1,0) and the first height axial mode is (0,0,1). The second length axial mode (second harmonic over the length) is (2,0,0), etc.

The sample calculations in Figure 6 illustrate the room modes comprising the response of our 23' x 13' x 8' room.

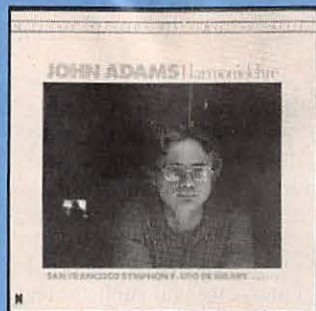
Many researchers have attempted to find relative room dimensions that minimize mode problems and thus yield good acoustical response. Some of their proposals include height-to-width-to-length ratios of 1:1.14:1.39, 1:1.4:1.9, 1:1.5:2.5, and 1:1.26:1.59. The debate on the ideal room size and ratios will probably go on forever. You may find it fun to calculate your room's numbers and compare them to some of these proposals.

—K.P.



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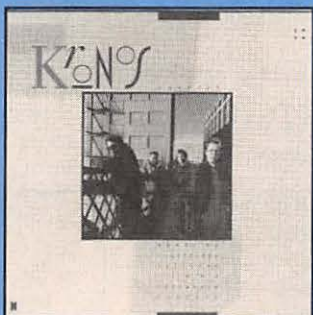
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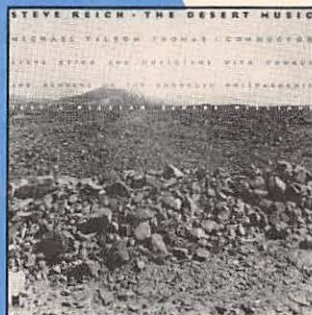
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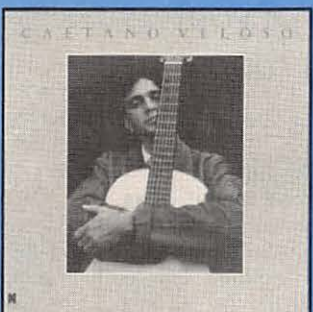
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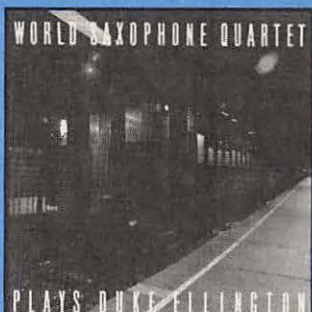
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is as even as as you can manage, especially in your primary listening area.

If your loudspeakers are somewhat bass-shy you can compensate—to a degree—by putting them in the corners. This way your woofers are coupling to three boundaries, both walls and floor. So bass will have a tendency to make a better transmission from the speaker into the room, and you'll get increased low end. However, corner placement is a double-edged sword. It will intensify room mode problems and the bass will become boomer because instead of occurring in a linear manner, the bass reinforcement you get will follow the room modes.

And more bass is not necessarily better bass. If loudspeakers are bass heavy, move them away from room boundaries (including the floor) by putting them on a loudspeaker stand. Another tool at your disposal may be tweeter or midrange balance controls on the back of your speakers, and even the tone controls on your amp or receiver. In especially difficult situations, using a separate equalizer to achieve uniform frequency response may help matters.

While listening to music, shift the speakers closer to the walls, farther from them, to the left and right. Listen for smooth frequency response. If you have reflective floors, a rug placed near the loudspeakers will help absorb troublesome early reflections from the floor that can really play havoc with stereo imaging and clarity. Listen and make subtle placement adjustments accordingly. Sometimes a very small shift will cause the image to fall into place.

Listen for good stereo placement; there should be a strong center image of the soloist that was recorded there, yet you should still have a good, spacious sense of the left and right channels. With the speakers placed too far apart, the stereo image is exaggerated, thus weakening the center image. Often, clarity is enhanced when loudspeakers are pulled away from the wall. The reason is that rear reflections from a nearby hard surface can create interference. As an alternative, you might try placing sound absorbers on the rear wall.

Now that the loudspeakers have been placed, we can finalize the hook-up of the sound system. Speaker wire can make a difference. Don't use standard zip-cord speaker wire of the lighter gauges (18 or 16 gauge cable).

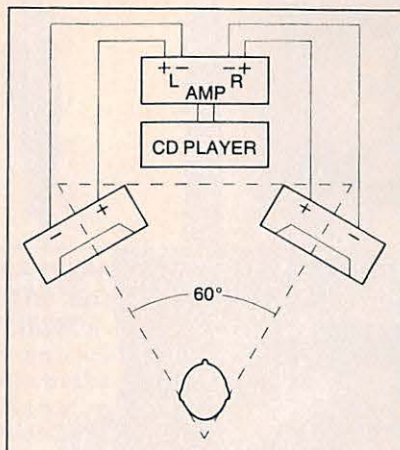


Fig. 7—The loudspeakers and the primary listening position should form an approximate isosceles triangle.

Its high resistance wastes amplifier power, and over longer runs it can add capacitance to the load that may make your amp unhappy. The lower the gauge number, the lower the resistance. Try fat 12 or 14 gauge cable. Of course, specialty speaker cables are excellent low resistance connectors, and usually incorporate special low-capacitance design.

## The perils that music finds in your CD player are trivial compared to those between the walls of your listening room.

Try to keep cable lengths down to a minimum. Locate your amplifier as close to the loudspeakers as possible, but never place any audio gear directly on a loudspeaker cabinet. Try to make sure your speaker cables are about the same length. Even if one loudspeaker is close to your amp and the other is 10 feet away, make both cables 10 feet.

Other cables, like the interconnections between your components—first and foremost, the one to your CD player—should be good quality cables and should also be kept short where possible. The better the cable

quality, however, the longer you can go without significant audible impact. If your player came with an obviously 29-cent interconnect cable, upgrading to an "audiophile" type wire might just make a difference.

The gold-plated (*thinly* gold plated, I might add) connectors on such cables are nice because they tend to resist corrosion and minimize added capacitance. Be aware, however, that most of such plating will wipe right off after the cables have been plugged and unplugged several times.

Lastly, make sure that none of your AC power cords lie parallel to any audio interconnecting cables. This might induce audible 60Hz hum through your system. For peaceful co-existence, cross power cables at right angles to audio cables.

There is no end to the intricacies of acoustics, and the twists of fate that sound may experience as it travels through its medium—the air. In fact, much of what you may like or dislike about recorded music hinges on factors outside the specifications of your audio equipment.

In many ways, the perils that music finds in the electronic confines of your CD player or discs (or amplifier or even loudspeaker) are trivial compared to those it will encounter between the walls of the recording studio or concert hall—and your own listening room.

But with some basic understanding of room acoustics, and with considerable patience and careful listening, most rooms can be tuned to create a better listening environment. While a poorly designed or setup listening room can markedly degrade the advantages of owning even the most expensive digital playback equipment, a little applied effort and ingenuity can make a real difference.

Okay, readers that's all for today. After spending \$500 for a CD player, \$1000 for an amplifier, \$5000 for loudspeakers, and \$10,000 for a new room, you should be ready for some serious listening enjoyment.

Provided you have some money left over to buy CDs. ☐

Editor-at-Large Ken Pohlmann is an Associate Professor at the University of Miami, and Director of the Music Engineering program there.



# EXPERIENCE THE *DIGITAL* DIFFERENCE



276



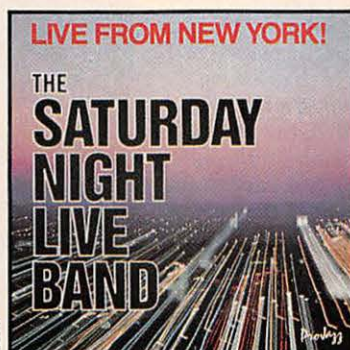
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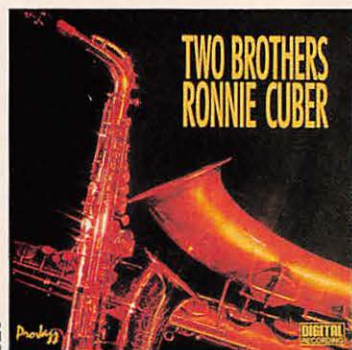
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623

276 **TIES & TAILS • ERICH KUNZEL**  
*Music of Gershwin & Ellington*

244 **GERSHWIN • PIANO**  
**CONCERTO IN F** *First new recording using Grofé's arrangement for Paul Whiteman*

266 **BRAHMS PIANO CONCERTO #2**  
*Peter Serkin & Robert Shaw*

281 **UP & AWAY • PARAMOUNT**  
**THEATER ORGAN in**  
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267 **POMP ON PARADE • Over 60**  
*minutes of spectacular marches*

627 **QUIET PASSAGE • Guitarist**  
*John Basile, Byron Olson, George Mraz*

623 **TWO BROTHERS • RONNIE**  
**CUBER & DAVID SANBORN**

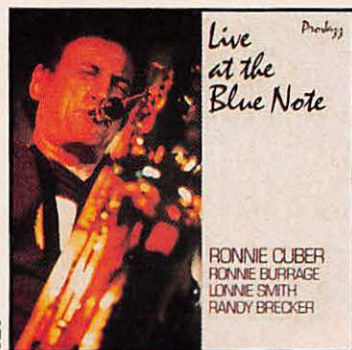
629 **RONNIE CUBER LIVE with**  
**RANDY BRECKER & LONNIE SMITH**

618 **WOLVERINES • Digital Big Band**

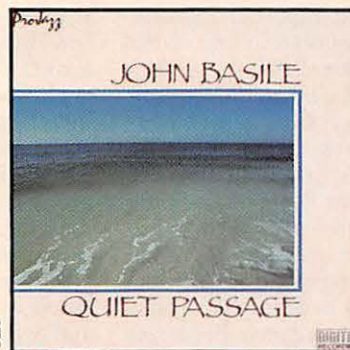
621 **SATURDAY NIGHT LIVE BAND**  
**LIVE FROM NEW YORK!**  
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618



629



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**Welcome to the world of  
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your hi-fi wishes come true, and you  
don't have to spend a dime.**

by David Vernier

Some of us dream in color; others dream in black and white. Some fantasize about biting into *sacher torte*; others long for Twinkies. And while some see visions of shiny CDs, their surfaces untouched by human hand or stylus, others swoon over LPs, stacked ten high on an automatic turntable.

To each his own, and with that in mind, we recently permitted ourselves to dream a little... well, quite a bit, actually. Of all life's noble pursuits and coveted dreams, none is so elusive but so potentially rewarding as the discovery of the "ultimate" sound setup. The fact that no ultimate, absolute sound system ever will be discovered doesn't stop audiophiles from looking; it only makes the search more challenging. Since we enjoy challenges of this kind, we decided to see how close we could come to the ultimate.

#### Dreams for Sale

For such important matters, we always turn to one of the best in the business, dream merchant and audio consultant Victor Goldstein. In his New York apartment, he helped us assemble a sound system that should satisfy the wildest desires both of those who love music and those who love to spend money.

But just because we're talking about dreams, don't get the idea that this system isn't for real. There's nothing artificial or contrived about any of its components. We weren't interested only in a component's price; rather,

our first priorities were quality and performance. But as these things tend to go, high quality and performance usually means a high price tag.

Now we wouldn't be totally honest if we didn't mention that for serious audiophiles there's a certain mystique that contributes to the personality and performance of a high-end sound system. By mystique, we don't mean hocus-pocus; but rather, unquantifiable psycho-acoustic factors that affect what we hear and how we hear it. We gave Goldstein complete freedom to apply his own inimitable mystique to the assembling of this "dream system."

#### Up From Down Under

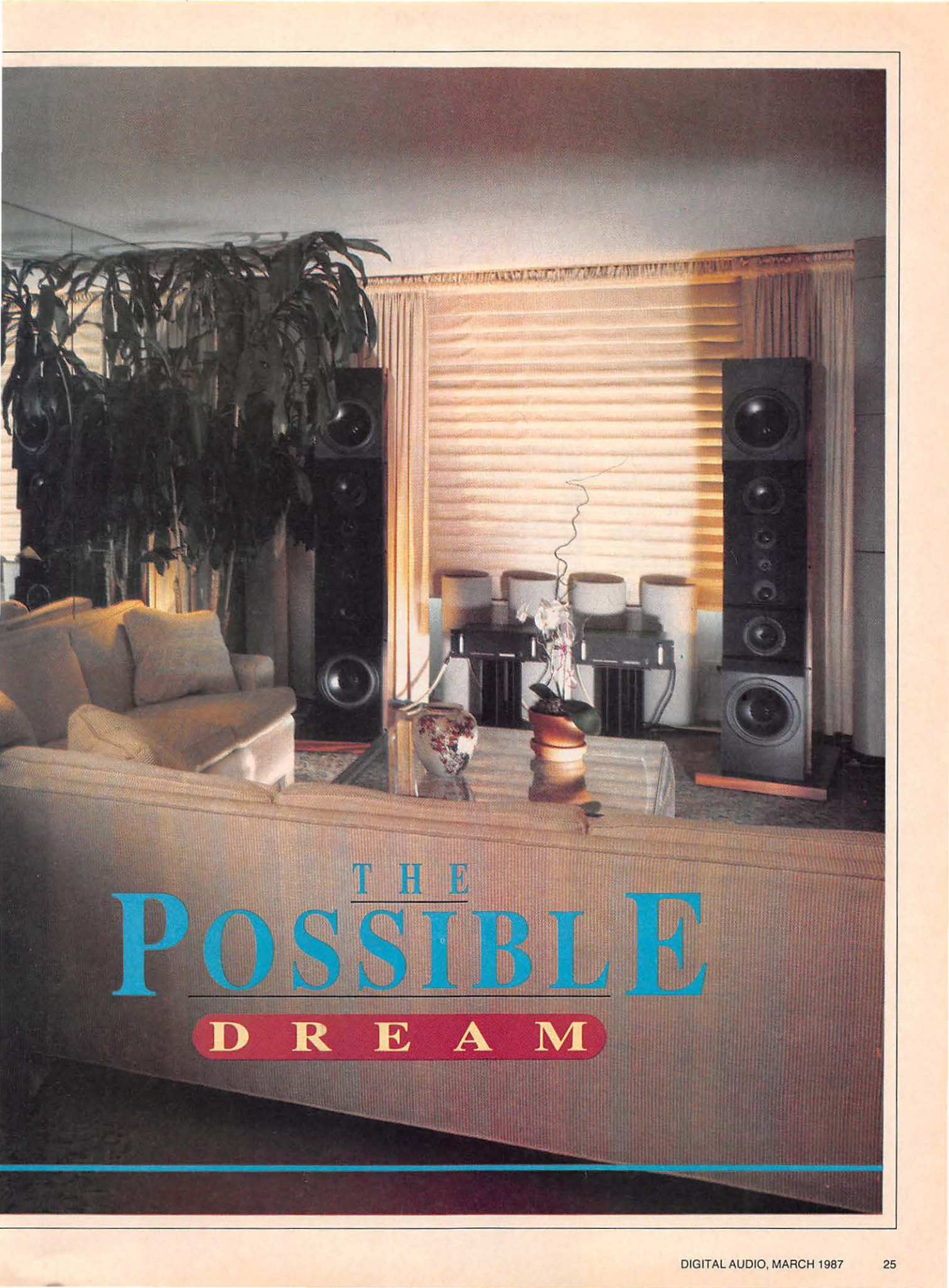
Some \$30,000 later, he informed us that all the arrangements had been made. Most of the components either were part of his own system or were available in New York City, thanks to the cooperation of Lyric Hi-Fi—a high-end audio store on Lexington Avenue, a few blocks away from his apartment.

The only parts Goldstein didn't have on hand were the speakers—which just happened to be in Australia. "No problem, the company is shipping them here right away," he assured us. These are no ordinary speakers. Each measured over six feet in height and weighed 375 pounds. A few days and many phone calls intervened, and then the word came from a Manhattan moving company: "Your speakers have arrived. We're bringing them up now."



*Continued on p. 88*





THE  
POSSIBLE  
DREAM



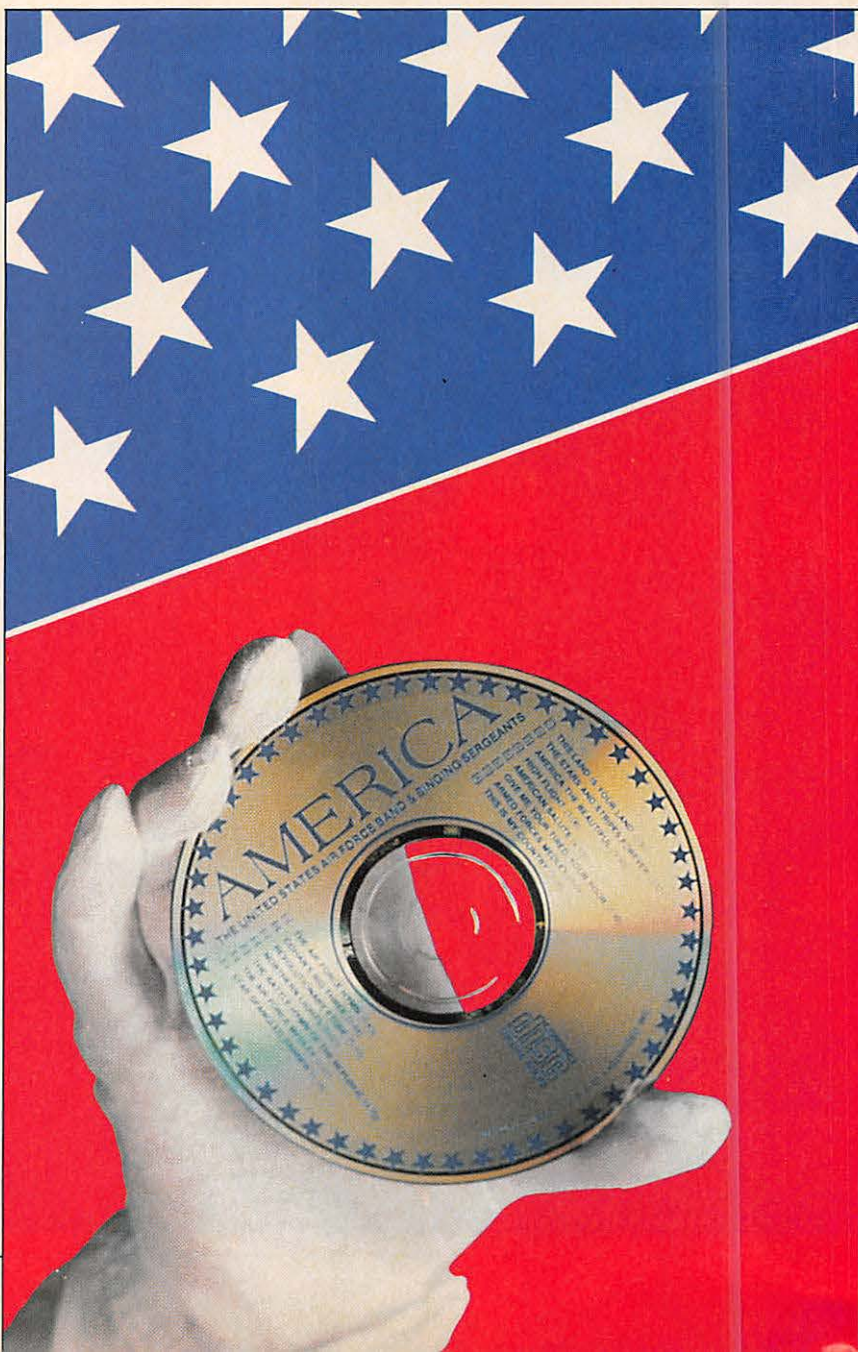
# THE **A Commitment and a Credo** AMERICAN

by David Vernier

**LaserVideo's newest facility in Huntsville, Alabama is the first U.S.-owned and operated Compact Disc pressing plant. The 60 million discs it will produce each year should go a long way toward relieving a continuing consumer complaint: CD shortages.**

"They don't make anything in this country anymore." You've probably heard that line often—maybe even muttered it yourself. Cars, cameras, suits, TVs, watches, and practically every other well-crafted and/or reasonably priced consumer product nowadays seems to come from Europe or the Far East. No Compact Disc players are manufactured in the U.S., and the overwhelming majority of the 50 million CDs sold here during 1986 were pressed overseas.

But just when it seemed that Uncle Sam was foolishly abdicating yet another booming technology to foreign manufacturers, along came LaserVideo, Inc. with a plan to make significant contributions—to the *American* economy for a change. Last November, the company asserted itself as the world's only wholly American-owned laser disc manufacturer by opening an impressive new \$20 million plant in Huntsville, Alabama.





# WAY

*Last November at LaserVideo's official opening ceremonies, company president James DeVries presented members of the country band Alabama with commemorative copies of their latest CD, The Touch.*



Consumers are bound to benefit from LaserVideo's Made-in-the-USA commitment. The estimated 60 million discs to be pressed in Huntsville each year are certain to have an impact on a market chronically plagued by product shortages.

## Cotton, Rockets, and Laser Discs

Huntsville, Alabama, a community of 150,000 in the northern part of the state, resembles many other American cities that experienced rapid growth and prosperity during the '50s and '60s. All the institutions that define modern industrial and urban America are here: factories, car dealerships, parking lots, and miles of multi-lane highways lined on both sides with shopping centers, fast food restaurants, gas stations, and motels.

But Huntsville's association with industrial America goes far beyond these obvious artifacts of rapid economic growth and population expansion. Huntsville is as much a high-tech center as is Boston's Route 128 and California's Silicon Valley. And this city has been "into high-tech" long before most of us even knew the term.

In the 1940s, at Huntsville's Redstone Arsenal, the United States Army began its now famous rocket research, in which Dr. Wernher von Braun and his "German space team" laid the groundwork that eventually enabled us to send astronauts to the moon. These activities led many space-related high-tech industries and a university to locate in this otherwise out-

of-the-way city surrounded by cotton fields.

LaserVideo, Inc., already a manufacturer of CDs and laser videodiscs at their plant in Anaheim, California, bought a 253,000 square foot building on the outskirts of Huntsville last April and began the complex and expensive job of turning a former hospital gown factory into the largest CD plant in the United States.

The day before the Huntsville plant's official opening, I looked behind the scenes to see not only the finished parts of the plant, but also work in progress. LaserVideo Vice Chairman Wan Seegmiller, President Ram Nomula, and Director of Marketing Mindy Mull made sure I missed nothing, from the power plant to the employee cafeteria.

The most important asset you can have when going into the laser disc manufacturing business (besides the \$20 million) is experience. Before purchasing their newest facility, LaserVideo had spent three years manufacturing all kinds of laser discs in Anaheim; they were the first to manufacture a CD in the United States, back in 1983. It was this familiarity with laser disc manufacturing that helped the company get its Alabama operation underway three months ahead of schedule.

By learning the disc manufacturing process on a relatively small scale over this three-year period, LaserVideo was able to perfect its production, quality assurance, and training techniques.

*Continued on p. 40*



## CD Number One

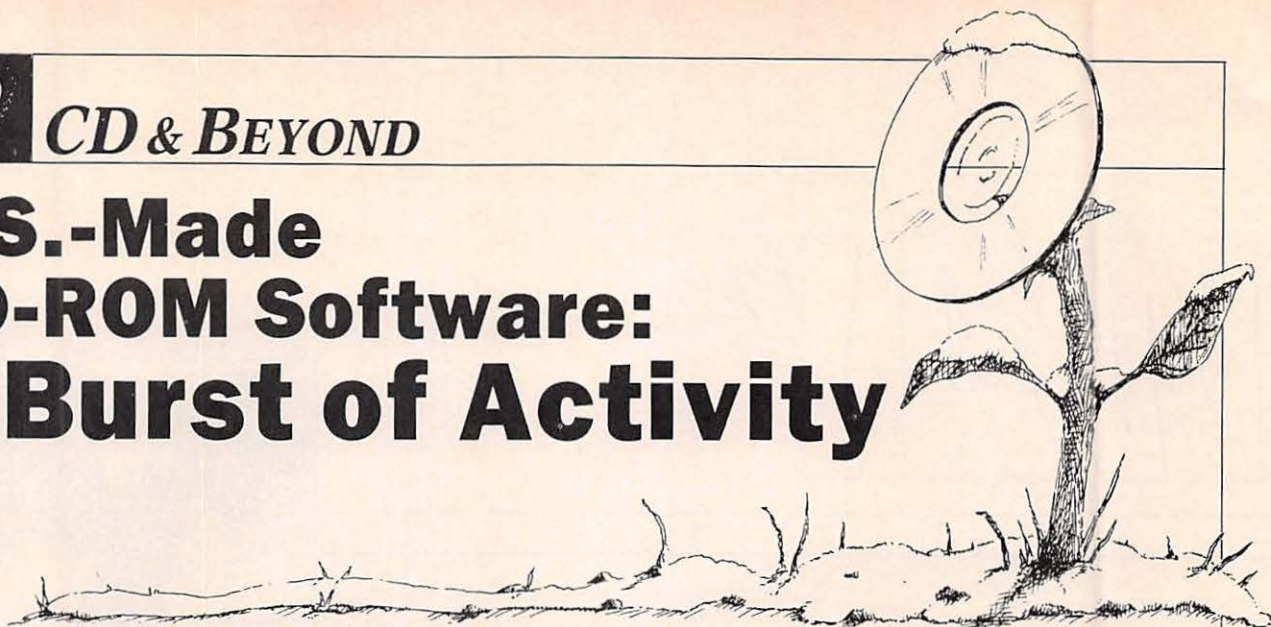
To celebrate the official opening of its new facility, and to promote its all-American flavor, LaserVideo fittingly invited America's hottest country band, Alabama. The group, named America's Favorite in *People* magazine's readers' poll for two years in a row, saw their recent digital recording, *The Touch* (number one on *Billboard*'s country charts), become the first CD to roll off the Huntsville assembly line.

"The thing we're excited about is the tremendous economic impact the LaserVideo plant will make in this area," said lead guitarist Jeff Cook. "And it's an American company, the only one that's doing this. What better place to have it than Alabama."





# U.S.-Made CD-ROM Software: A Burst of Activity



*Here comes the information mega-storage system of the future. Bulky, dust-covered books in public library basements are doomed. The Compact Disc has done it again.*

by Bryan Brewer

**W**ell, here it is almost spring again—time for the Second Annual International Conference on CD-ROM sponsored by Microsoft. Not only has CD-ROM survived the winter, this Compact Disc mega-storage system for computer program and database information shows every indication of bursting into flower in 1987.

The first crocus will poke up in early March, when Seattle's Sheraton Hotel will host Microsoft's gigabyte gala. This event should attract at least 1000 CD-ROM enthusiasts, ranging from casual tire-kickers to ardent developers with several data discs under their belts.

Stressing the importance of actual development and distribution of CD-ROM products, Microsoft has titled the conference "Making It Happen." Last year's event was really just a showcase for the new technology on a theoretical level, with few actual products in evidence. This year it's time to get real about CD-ROM, and things should be different.

For starters, the computer community has pretty much agreed upon standards for disc file structures. This paves the way for using the same disc on an Apple, IBM, or any other type of computer. And secondly, the commotion about CD-I—the Compact Disc-Interactive format adopted by major

audio-world (and other) manufacturers—has settled down to the point where most people realize that CD-ROM is mainly a computer peripheral, and that CD-I is a stand-alone player for consumers to connect to their TVs and stereos.

Another part of the picture is the CD-ROM hardware itself. Up to this point, CD-ROM drives have not been available in retail channels. That will very likely change soon. It's my bet that this will be the year you can go down to your local computer dealer or Radio Shack store to buy a CD-ROM drive for your IBM PC-compatible or Apple computer. (Atari and Commodore Amiga will probably wait, watching the popularity and pricing of the technology.)

Although most of the hardware is made in Japan, the software for CD-ROM comes primarily from the United States. This reflects the wonderful synergy between East and West. They make the machines, we write the programs. Sure, you can't buy a CD-ROM drive made in the U.S.A.; but likewise, when was the last time you bought Japanese software?

### Software Solutions

One of the first places CD-ROM is having an impact is in libraries, where cumbersome card catalogs and bulky reference works are easily adapted to

the Compact Disc. R.R. Bowker has published two of the most used library references—"Books In Print" and Ulrich's "International Periodical Directory"—on CD-ROM, and libraries are snapping them up, along with subscription services for regular updates of the books...uh, I mean discs.

What are the advantages of having these tomes on CD-ROM? In addition to the compactness and savings on printing costs, the main benefit is the ability to search for occurrences of specific words in the database. If you weren't already familiar with any of *Digital Audio's* publications, you could ask your librarian to search for the phrases "digital audio" and "Compact Disc."

From Ulrich's you'd find the listing for this magazine and *The Green Compact Disc Catalog*, and from *Books In Print* you'd find Ken Pohlmann's "Principles of Digital Audio" as well as "*Digital Audio's Guide to Compact Discs*," published recently by Bantam Books. The growing popularity of CDs is sure to spawn more books and magazines on the topic.

There are at least another dozen discs specifically designed for use in libraries—everything from card catalog databases to the *Laser/Search Book Identification and Acquisition System* offered by Ingram Book Company. With this handy disc, your local library (or bookstore) can look up available titles from Ingram, a book distributor, and order them automatically via the computer's telephone data connection to the nearest Ingram warehouse. (Perhaps someday we'll see the same efficiency in ordering music CDs as well.)

Not far behind libraries in the use of





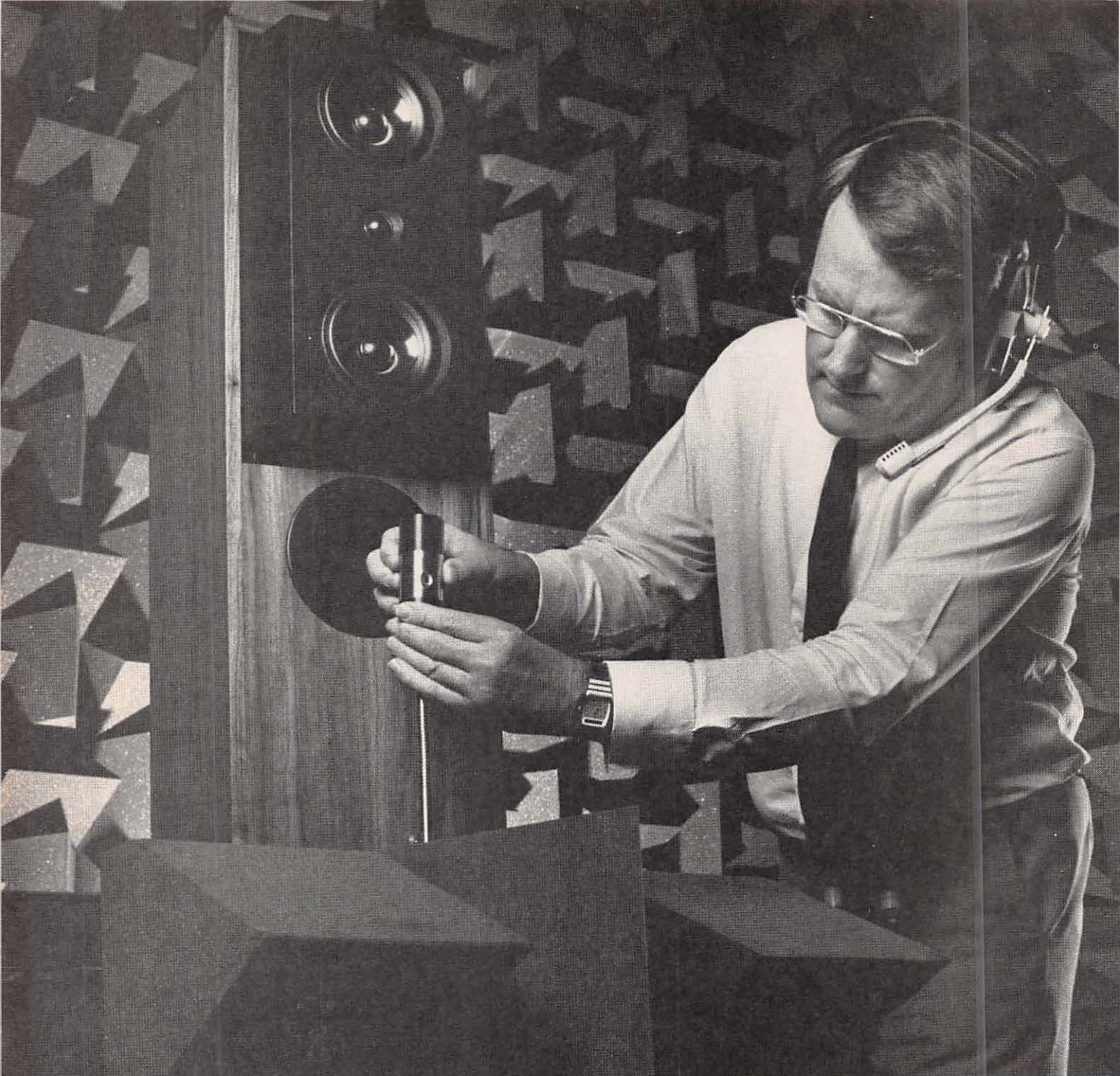
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***'Before we could make our speakers better,  
we had to invent a better speaker test!'***

—Laurie Fincham, DIRECTOR OF KEF RESEARCH AND DEVELOPMENT

#### ONE STEP IN THE MAKING OF A KEF

A speaker is usually measured by frequency response sweeps. But their proper interpretation is difficult at best — misleading at worst.

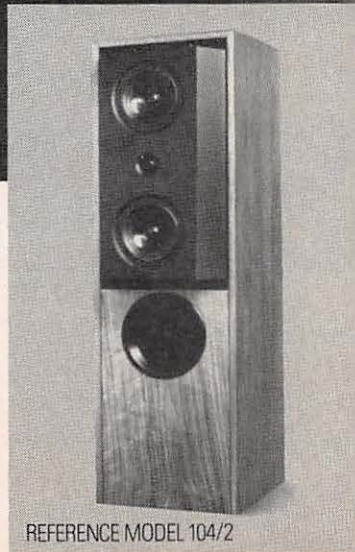
'So in 1971, KEF joined forces with Hewlett Packard and Bradford University to develop a more reliable test: computerised Fast Fourier Transform (FFT). Our computer

analyzes a series of pulse tones to produce a far more accurate, more detailed picture of frequency, phase, and transient time-domain behaviour.

'FFT testing has already spurred us to major advances in phase integrity and production consistency. It's certainly easier to make progress when you can see where you're going.'

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CD-ROM is the financial community. Accountants and analysts can search several disc databases for current information on thousands and thousands of U.S. companies. Advertisements for these CDs are already appearing in financial magazines and trade journals, further enhancing general awareness of the Compact Disc's potential for data storage.

Of particular interest to financial types would be a disc or two full of stock price histories. Some of the "program trading" activity attracting interest on Wall Street recently relies on stock price histories, now currently available in electronic form only from on-line, dial-up information services.

Having access to the historical data on a disc would mean that only the latest data would have to be downloaded from the on-line services, thus offering considerable savings in telecommunications costs. Watch for a lot more activity in this area this year, including automatic links to spreadsheet software and other value-added features of having the data on your desktop.

#### Professional Progress

CD-ROM can be a real timesaver in finding information quickly. And if time equals money, CD-ROM makes the most business sense in those transactions where you pay the most for someone's time—such as with lawyers and doctors.

There have been a few legal databases put on CD-ROM so far, but the significant movement will occur when West Publishing—by far the largest publisher of law books—gets into the act. That very intention was announced last summer in the form of a joint development agreement with Wang Laboratories, a leader in supplying computer systems to attorneys.

Years ago as a first-year law student, I remember how tedious it was to look up citations and cross references in the law library. Today this information is available via extensive, but costly, on-line services.

Within a year or two the same data will be on the CD-ROM desktop, allowing legal researchers to quickly pursue fine distinctions in the law without running up horrendous telecommunications charges.

In the medical field, CD-ROM is already earning a reputation not only as a timesaver, but as a lifesaver.

Micromedex, of Denver, has published three CD-ROM discs that provide emergency medical information at the touch of a few computer keys. One disc contains extensive data on over 3700 prescription and over-the-counter drugs, including adverse drug interactions. Also included are more than 5000 drug consultations with answers to specific drug-related questions.

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*Although  
most of the  
hardware is  
made in Japan,  
the software for  
CD-ROM comes  
primarily from the  
United States.*

---

The second disc is a clinical toxicology database of 350,000 commercial, industrial, pharmaceutical, and botanical substances for use in poisoning emergencies. And the third disc offers 10,000 clinical abstracts for treatment of a wide variety of critical medical emergencies, including evaluative answers to medical questions via a dictionary and index. In all cases, the search software allows emergency room or phone hotline personnel to find answers fast.

Other medical CD-ROMs are more research oriented, as are discs from a growing number of academic areas: The Fine Chemicals Directory, Agricultural Data Base, Electrical and Computer Engineering Index, Environmental Health & Safety, Petroleum Abstracts, National Institute of Building Sciences. At last count there were well over 100 CD-ROM titles from numerous fields.

And the mass storage of the Compact Disc is not limited to text and numbers. Digital mapping on CD-ROM is gaining speed, with real applications appearing in the field of local telephone and utility companies keeping track of their underground lines. And the Voyager images of Uranus were distributed on CD-ROM.

This rich diversity of titles tells the story of how this technology is already being applied. It hasn't taken long for the mass-o'-megabytes mentality to take root in corporate, professional, and academic markets.

#### Home and School

The two major remaining beachheads on the forward march of CD-ROM are the home and the school. Here the lone pioneer has been Grolier with its "Electronic Encyclopedia." But that situation will change soon, particularly as Apple Computer reveals more of its plans for the Compact Disc.

An early sign of impending advances is a prototype CD-ROM of "The Visual Dictionary," published by Editions Quebec/Amerique and Facts on File, Inc.

"The Visual Dictionary" is a book of over 400 pictures of common items—everything from volcanoes to mushrooms, eggbeaters to eyedroppers, bicycles to nuclear power plants. The parts of each item are marked and named for easy identification. It's an excellent way to look something up if you don't know the name for it.

The book itself, published in French and English editions, is already in its third printing. But what makes the CD-ROM so special is not only the ability to search for various pictures, but to see the terms in French or English or both—and hear them as well.

"The Visual Dictionary" disc integrates pictures, multilingual text, and multilingual audio into a push button reference work that doubles as a versatile teaching aid. While this product is aimed at schools, it has many other potential markets in business and the home.

It hasn't even been three years since the CD-ROM standard was first made available, and the technology is making steady progress in finding useful applications. A disc like "The Visual Dictionary" only begins to tap the promise of the multimedia virtues of the format. Stay tuned for further developments. □

---

*Bryan Brewer designs and develops multimedia software for educational and entertainment applications. He's the president of Earth View Inc., in Seattle, WA.*





Classical music and artists take center stage for *Digital Audio*'s April issue. We'll feature rare interviews with conductor **Colin Davis**, American pianist **Peter Serkin**, and cello sensation **Mischa Maisky**. Included will be an expanded classical CD review section, giving you even more of our unique commentary and opinion from our staff of experts.

In an exclusive interview, the great film director **Federico Fellini** discusses his long time relationship with film composer **Nino Rota**. Rota's *Concerto for Strings* is just now available on a new CD from Philips Classics, performed by the acclaimed Italian ensemble **I Musici**.

From center stage, we'll move out on the road to test the latest in-dash car tuner/CD players from **Technics**, **Kenwood**, and **Alpine**. You'll read what we found out and what we recommend for maximum driving pleasure.

The sixth installment in our loud-speaker review series features a test report on the much talked-about and listened-to **Matrix II speakers from B & W**. Our verdict? Let's just say the evidence was conclusive.

The **Winter Consumer Electronics Show** in Las Vegas, a three-ring circus displaying the latest audio, video, and computer products, isn't open to the public. But we'll have the whole story for you, including impressions of the five-day event and an overview of the remarkable new products you'll soon be seeing in the stores.

Finally, you'll be reading a vast assortment of 40+ CD reviews, columns by Ken Pohlmann and Bryan Brewer, the no-holds-barred letters department, and the most up-to-date news about the fascinating world of digital audio. ☐

# The Digital Mystery Tour

by Andrew Taylor



It had all the makings of a John Le Carré spy novel: the anonymous tips, false leads, reluctant testimony, the endless footwork. But through all the bureaucratic fog, two things became perfectly clear—the Beatles were coming on Compact Disc, and someone didn't want us to know.

All the more reason to find out.

It began with a mysterious phone call. A husky voice gasped that a friend of a friend had heard of a possible upcoming Beatles release on CD. He barked out the titles like a roll call: *Please Please Me*, *With the Beatles*, *A Hard Day's Night*, *Beatles For Sale*. But then the voice was gone... the line was dead.

Strange, I thought as I hung up the phone. But then it hit me: This is it! This is what we've been waiting for. If the tip was true, it could mark the end of a long, anxious wait for thousands, and the beginning of the biggest CD release of 1987 and '88: the entire Beatles catalog.

Why the wait? There are two main reasons for Capitol's reluctance to release the Beatles on Compact Disc. First and foremost is an \$80 million lawsuit by the Beatles against Capitol. Alleged breach of contract, fraud, false accounting, and breach of fiduciary duty all make an appearance in this eight-year labyrinthine litigation. Leonard M. Marks, a lawyer representing three of the Beatles (Ringo, George, and the estate of John) states that Capitol has been holding off the CD release in attempts to pressure the group into settling out of court. "The Beatles want their entire catalog on Compact Disc," he says. "In fact, they've demanded it." (Capitol denies that this lawsuit was a factor. Other media luminaries believe otherwise.)

Reason number two for the delay was Capitol's lack of CD pressing facilities. Without plants of its own, the company couldn't meet the incredible demand a Beatles disc would create without contracting from other companies. (Some speculate that sales for *Abbey Road* or *The White Album* could reach one million discs—more than triple the phenomenal sales of Springsteen's *Live/1975-85 CD*.) But with two Capitol pressing plants now on-line, this second reason is no longer a factor.

These setbacks are starting to clear; pressure from the public has become

immense; the time seems ripe. I had to know for sure. So, I rolled up my sleeves, slapped on my shades, and began to dial. Little did I know that it would become a three-hour game of "Dialing for Denials."

"Where on earth did you get this information?!" murmured a nervous voice at Capitol. Another whispered, "I can't say anything at the present time." "Let me transfer you," said almost everyone else. It seemed fruitless. Obviously someone had reached these people before me. They were afraid to talk. Someone at the top wanted to keep the story under wraps.

This was a scenario that an editor's dreams are made of: the dark, smoke-filled conference rooms, the shifty, wide-eyed informants, the bureaucratic side-steps, and the hushed, excited voice in my head chanting "conspiracy, conspiracy."

Finally, the bubble burst as EMI announced plans to release the original 13 Beatles albums on CD this year. An abrupt ending to a merry chase, but a happy ending nonetheless.

The discs will be released in chronological order beginning with the first four on February 26: *Please Please Me* (CDP 46435), *With the Beatles* (CDP 46436), *A Hard Day's Night* (CDP 46437), and *Beatles For Sale* (CDP 46438).

All the discs will use the original British titles and configurations. (Beatles releases in America were given different titles, and songs were often omitted or rearranged.) The CDs will therefore be closer to the Beatles' original intentions.

So, after four years of frustration, the Beatles are going digital. But this revelation raises other questions. Who will remaster these classics? At what intervals will the discs hit the market? And, will demand for the discs skyrocket the CD format into wider acceptance and a larger audience?

The setting sun peered through the frosted window as I leaned back and rubbed my dial-worn fingers. Sure, I was tired. But it had been worth it. The first chapter of the great Beatles saga was complete. But I wondered about the great adventures still in store for myself and the *Digital Audio* staff. Certainly, we haven't seen the last of Capitol, or the Beatles, or their lawyers... stay tuned. ☐



# NO HYPE

The following subscription solicitation contains no sales pitch. No hype. No attention getting gimmicks. It consists solely of unsolicited reactions from the readers of *Digital Audio*, Compact Disc enthusiasts whose excerpted remarks appear below.

"Thank you for providing a magazine for music lovers. Your reviews of digital equipment and digital discs have provided a wealth of information to steer us toward the best equipment values and best recordings."

Larry Oliver  
Westwood MA

"Congratulations on a thoroughly useful magazine. I've been a subscriber from the first."

Dean Taylor  
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"I'm writing to tell you how much I enjoy your magazine. I am constantly going over old issues for my enjoyment as well as to enlighten my friends."

Peter M. Johngren, MD  
Hartwick NY

"I recently subscribed to *Digital Audio* magazine because I found it to be the most informative, interesting and valuable magazine on the market. I would like to convey my thanks to you and your staff for such a terrific job of publishing."

Keith Pittock  
Windsor, Ontario (Canada)

"I want to congratulate you on your superb magazine. Bravo! I'm celebrating my second anniversary as a subscriber. I just love the touch of humor in your magazine."

Paul Lindsay  
Stittsville, Ontario (Canada)

"You have a great magazine. I first started buying it from the magazine rack at the store with the December 1984 issue. After buying it a couple more times I had to subscribe! (Since then) I called and ordered the first three which I didn't have. When my subscription renewal comes up soon, I'm going to send it in right away for as many years as I can get."

Tim Norwick  
Wheaton IL

"I usually purchase classical discs only upon the recommendations of your magazine."

Ritch Nasca  
Painesville OH

"I am writing to let you know how much I appreciate your publication. As a firm believer in the sonic superiority of the CD over the LP, cassette, open reel, etc., and its uniquely convenient packaging, portability and potential, I commend you to your dedication to this mode."

Richard H. MacDowell  
Fort Lee NJ

"I have been a subscriber since June 1986 and have decided to cancel all my subscriptions to other audio review magazines in favor of your publication. I am surprised to find that there are so few magazines dealing with digital audio and Compact Discs exclusively, since this is by and far the future of audio for both the industry and the enthusiast."

George Paoletto  
Scottsdale AZ

"I would like to commend you on an excellent publication. It has helped my disc collection grow."

Eric Dommann  
Lewisburg PA



"Your magazine is an absolute delight! We eagerly await each and every issue."

Richard Kaye  
Brooklyn NY

"Never before have I hungered for the next issue of a magazine, until *Digital Audio*. In a way I feel like *D.A.* is mine too. I read every word (your staff should be commended). I laugh when I read your articles, cheer (vocally) when you put someone in their place, and think deeply about what I've just learned from technical articles. *D.A.* is my monthly reward from my wife (a gift subscription) for being a good boy with good taste. My wife does everything well."

Rick Scothern  
Brigham City UT

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# ADS CD4

## American Technology With a German Accent

by Ken Pohlmann

I've always appreciated individuality. When it comes to art, music, automobiles, even friends—everything that I value most—I've always looked for the distinctive, the unique and, of course, the highest quality available.

Compact Disc players are no exception to this rule. My heart always beats a little faster when an exceptional player crosses the test bench. Quality of design, integrity of construction, and superiority of performance occasionally all work together to separate a few players from the many.

The ADS CD4 is clearly unique in many respects. First and foremost, it is a multinational player. Like its more expensive, slightly more elaborate progenitor the CD3, the CD4 is marketed by an entirely American company, Massachusetts' Analog & Digital Systems, Inc. The player was designed and engineered by ADS, with styling and industrial design contributed by their German affiliate, Braun Electronics (part of the outfit that makes the nifty coffemakers and such). Furthermore, CD4 is manufactured in Japan. It thus captures the best of three worlds: American engineering, European design, and Japanese construction.

The CD4's unique styling makes a clear statement. At first glance the streamlined front panel presents only the most essential operating controls such as play, pause, fast scan forward and backward, etc. To further minimize clutter, the headphone level uses a push-to-recess control.

Other less frequently used functions like the indexing, repeat, clear, cancel and program controls are concealed inside a hinged panel, located just below the disc tray. The result is sleek indeed.

A distinctive green display shows complete timing and track number data, and includes function indicators such as disc repeat and A-B repeat modes.

I do have one personal gripe. Perhaps it was just me, but I consistently hit the return button by accident instead of the forward skip control. Moving the return button away from the skip control—next to the start button, say—might prevent push-first-look-second

types like myself from causing themselves aggravation.

When the comprehensive front panel is out of reach, the CD4's primary functions may also be commanded from the optional RC1 master remote control. The RC1 reminds one that ADS's players are more than stand-alone components; they are part of an integrated system, the *Atelier* line. This *Bauhaus*-style collection includes amps, tuners, cassette decks, even (perish the thought) turntables.

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*The CD4 captures the best of three worlds: U.S. engineering, European design, and Japanese construction.*

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The RC1 transmitter contains both a numeric keypad and several function controls. The latter are located under a hinged cover; multiple labels overlay the keyboard and enable their multipurpose use. The appropriate overlay is selected (i.e. CD, digital tape, audio, video disc, satellite tuner, video recorder, and TV), causing its functions to be internally addressed when that type of equipment is indexed on the controller. The whole arrangement is not unlike those old-fashioned telephone directory gizmos where you move a slider to the desired letter of the alphabet and then open it up, revealing the appropriate page. Sort of a Rube Goldberg arrangement, but a clever one, and a considerably more elegant solution than making a single remote with about a zillion buttons.

Various ADS components may be controlled by a single RC1. For example, when CD is indexed, a particular button will be labeled—and it will control—the repeat mode. But when AUDIO is indexed, the same button could

control bass equalization.

The uncluttered look extends to the back panel. A metal cover is provided to help minimize the spaghetti effect by concealing the connectors, which include left and right audio output jacks, and a subcode jack. ADS refers to the subcode jack as a digital output; this should not be confused with the digital audio outputs that are provided on a few players, such as the Magnavox CDB-650.

The unique nature of the CD4 is apparent even inside the case. Specifically, this unit is unusual because its quality of construction is so damn good. The chassis is made of thick gauge steel with internal steel bracing for added rigidity, and for shielding against internally generated radio-frequency interference. All of that adds up to a 20-pound player—a chore to move around, but one which should resist any reasonable drop test.

The disc drive is beautifully designed. It's constructed of long-lasting metal parts, with the critical sections made of cast alloy. Other thoughtful touches include damping material on the clamping arm, and beefy, over-specified drive motors. The drive is isolated on rubber pads. There is no transport screw.

The disc drawer is made of plastic, but I particularly like its deep-dish, sure-fit design. This is a marked difference from those players in which it is difficult to properly load a disc unless you make a conscious effort. Another sign of quality: the bottom of the disc drawer is mounted on a metal plate, and slides in metal side channels to ensure precise movement.

Returning to the personal peeve department, I would have preferred a little faster drawer movement and initial disc reading.

The electronics borrow from Sony technology: the first-class Sony two-times oversampling (CX 23034) and EFM demodulation and CIRC error correction (CX 23035) chips are used. A Braun 0037-038-1 controller chip and a pair of Burr Brown PCM 56P D/A converters complete the primary hardware.

The analog output section is fully

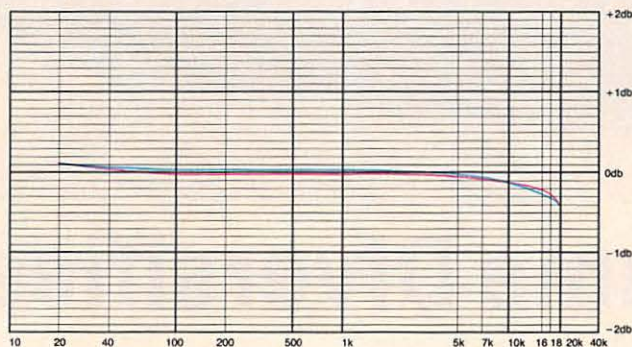
*Continued on p. 100*





## TEST REPORT ADS CD4

RATING ★ ★ ★ ★ ☆



The ADS CD4 showed a slight frequency response boost at the low end, and moderate roll-off to  $-0.4$  dB at 20 kHz.

### Measured Specifications

**Frequency Response:** 20 Hz to 20 kHz; left  $+1/-0.4$  dB; right  $+1/-0.4$  dB

**S/N Ratio:** Left 99.2 dB unweighted; 101.9 dB A-weighted; Right 98.7 dB unweighted; 101.4 dB A-weighted

**Total Harmonic Distortion + Noise:** Left .0027% at 0 dB, 1 kHz; .0024% with 23 kHz filter; Right .0021% at 0 dB, 1 kHz; .0020% with 23 kHz filter

**Intermodulation Distortion:** Left .0060% at 0 dB; .027% at  $-10$  dB; Right .0039% at 0 dB; .011% at  $-10$  dB

**Channel Separation:** Left 97.3 dB; Right 97.8 dB at 1 kHz

**Line-Out Level:** 2 V

**Output Filter Type:** Digital; Two-times oversampling.

**No. of D/A Converters:** 2

**No. of Pickup Beams:** 3

**No. of Programmable Selections:** 16

**Maximum Search Time:** 3 seconds

**Audible Fast Search:** Yes

**Indexing:** Yes

**Remote Control:** Yes (optional)

**Disc Loading:** Front drawer

**Headphone Jack:** Yes, variable

**Power Consumption:** 30 W

**Dimensions:** 17.5 X 14.8 X 2.75 inches

**Weight:** 20 lbs

**Price:** CD4: \$900, RC-1: \$100

**Address:** ADS, Analog & Digital Systems, Inc.

One Progress Way

Wilmington, MA 01887

In the Pohlmann Labs, the ADS CD4 displayed exemplary performance. The frequency response of both channels measured  $+0.1$  dB at 20 and 40 Hz, then flattened out. The left channel rolled-off to  $-0.1$  dB at 7 kHz,  $-0.2$  dB at 10 kHz, and  $-0.4$  dB at 20 kHz, while the right channel similarly showed  $-0.1$  dB at 7 kHz,  $-0.1$  dB at 10 kHz, and  $-0.4$  dB at 20 kHz.

Left channel separation measured 96.8 dB at 100 Hz, 97.3 dB at 1 kHz, 92.7 dB at 10 kHz, and 94.1 dB at 20 kHz. The right channel measured 96.8 dB, 97.8 dB, 92.7 dB, and 94.3 dB at the same four frequencies. It doesn't get much better than this.

Linearity with respect to amplitude was pretty good. The left channel measured  $-2.9$  dB at  $-3$  dB actual,  $-19.9$  dB at  $-20$  dB, and  $-59.3$  at  $-60$  dB. The right channel measured  $-2.9$  dB,  $-19.9$  dB, and  $-59.6$  dB at the same three amplitudes.

THD+Noise measured at 0 dB with respect to frequency was excellent. The left channel measured 0.0035% at 20 Hz,

0.0027% at 1 kHz, 0.0037% at 10 kHz and a low 0.0036% at 20 kHz. The right channel was even better, measuring 0.0027%, 0.0021%, 0.0036%, and 0.0033% at the same four frequencies. When a 23 kHz brickwall filter was inserted, the left channel measured 0.0024% at 1 kHz, and the right channel measured 0.0020%. Clearly, out-of-band components are slight.

THD+Noise measured at 1 kHz with respect to amplitude showed the left channel with 0.0043% distortion at  $-3$  dB, 0.082% at  $-10$  dB, and 0.096% at  $-60$  dB. The right channel measured 0.0030%, 0.0065%, and 0.081% at the same three amplitudes.

SMPTE IM distortion on the left channel measured 0.0060% at 0 dB and 0.027% at  $-10$  dB. The right channel measured 0.0039%, and 0.011%.

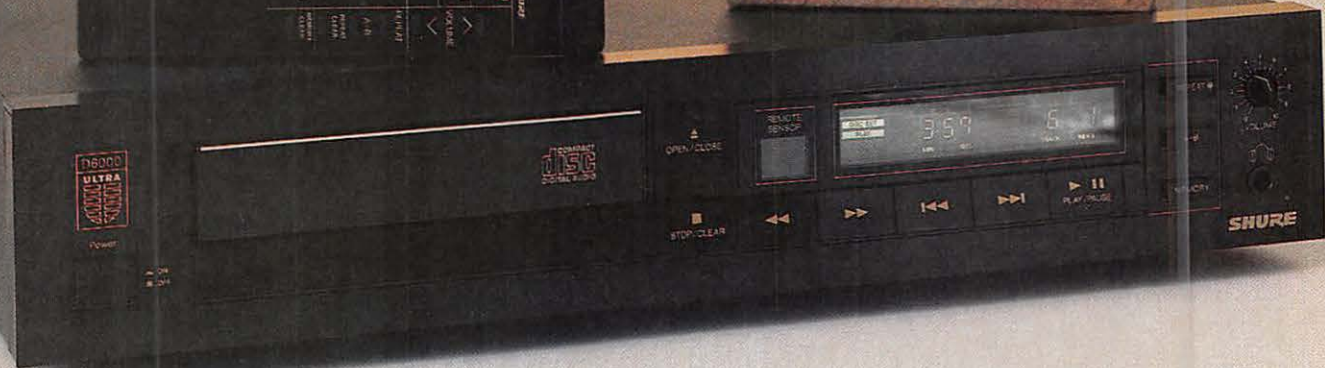
De-Emphasis error on both channels measured identically: 0.27 dB at 1 kHz, 0.53 dB at 5 kHz, and 0.04 dB at 16 kHz.

*Continued on p. 101*





# SHURE D6000



## A Respected Name Diversifies

by Ken Pohlmann

**S**ome interesting statistics appeared in the *Wall Street Journal* last October. They showed that dollar sales of vinyl LPs had dropped to below 20 percent of the music media market, down from their 30 percent share in 1985. The figures indicated that at the same time, dollar sales of Compact Discs were rising above 20 percent of the same market, up from 10 percent in 1985 (cassette tapes still account for more than half the total).

Now suppose that you were the president of one of the world's leading manufacturers of phonograph cartridges—the thing that hangs on the end of a turntable's tonearm and actually tracks the grooves on a record. And suppose that you happened across that same *Journal* article. That set of numbers might just cause you to reflect for a moment.

And it might make you recollect what happened to the slide rule business a few short years ago when pocket calculators hit the market.

Finally, it might prompt you to take

swift and effective action. After all, you wouldn't want your business to become something that your grandchildren might only read about in a history book. Your answer, of course, would be to quickly introduce competitive products in the new market.

That's exactly what's been done by Shure Brothers, an old and well-respected name in the phono cartridge game (as well as in microphones and audio electronics). One of Shure's new products is the D6000 CD player, a two-times oversampling, dual D/A design, with remote control. Can this American-name player compete against the flood of Japanese imports? Sure it can, because it is also an import from the land of the rising sun.

Nonetheless, the D6000 looks the way a Shure player should look. That company has built a considerable reputation on solid fundamental engineering and no-nonsense, cost-effective audio quality. And the D6000 looks as if it offers exactly that.

The front panel has 11 buttons and

one knob. All the controls are large and clearly labeled. No fancy "shuffle play," "auto space," or "self scan" features. Just the basics. Up to 15 tracks can be programmed on the D6000, and you can do it the easy way. Access each track number with the track skip buttons, then enter the selection by pressing the memory button. The track skip button can be pressed during programming, and that operation will also be stored. Simple.

Similarly, the Shure's display is comprehensive yet free of gimmicks. Minutes and seconds are displayed, as are track and index numbers. Operational modes such as disc ready, play, and A-B repeat are verified by lighted indicators.

Around back, both fixed and variable audio output jacks are found, the latter being managed by the headphone level control provided on the front panel. There is a subcode jack—these days a moot point, it would appear, due to the utter lack of subcoded discs. Underneath are two completely removable transport screws that have no recessed



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storage slot or holders. I'm afraid that a large percentage of these screws will wind up lost.

For those who like a little glamour in their lives, the D6000's remote control has a generous supply of buttons—25 in all. They duplicate all front panel controls, including disc drawer open/close, and provide other functions as well. The remote's numerical keypad can be used to select track numbers during playback or for memory storage. During programmed playback, the numerical buttons access the sequence of programmed addresses, as opposed to track numbers.

A memory clear button erases all

tracks from memory. A repeat clear button cancels a programmed repeat play operation. Volume up/down buttons control both headphone jack and variable line output levels.

Looking inside the D6000 reveals the economy of design and the kind of construction typical of good quality Japanese-made players. The chassis is all metal, as are the top and side panels. Both the disc drive and disc tray are made primarily of plastic, however.

The motors required for operation are consolidated underneath the D6000. The unit's engineering looked good overall, but I would like to have seen more metal parts, including a

metal drive subchassis.

I judged the disc drive's horizontal impact immunity to be average, and its vertical impact immunity to be slightly above average. The drive negotiated nine radial strips on my torture disc; this is very good performance. Track-to-track access time was okay, averaging around four seconds.

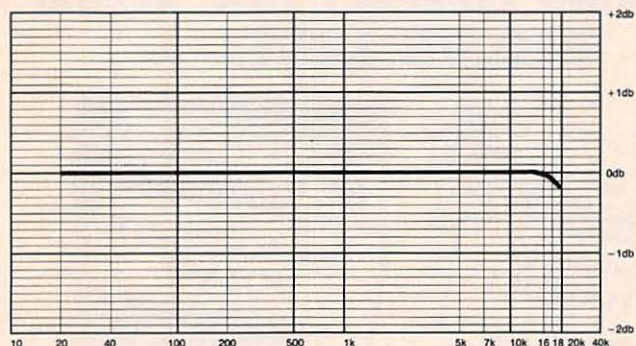
The disc tray, which closes with a nudge, employs sloping disc holders that do not touch the disc data area and non-magnetic clamping. Drawer opening and closing was fairly speedy, with a bit of mechanical noise.

One primary circuit board holds power supply, servo controls, digital

*Continued on p. 102*

## TEST REPORT SHURE D6000

RATING ★ ★ ★ ★ ☆



The D6000's frequency response was ruler flat to 16 kHz, then each channel dropped to -0.2 dB at 20 kHz.

### Measured Specifications

**Frequency Response:** 20 Hz to 20 kHz; Left +0/-0.2 dB; Right +0/-0.2 dB

**S/N Ratio:** Left 97.9 dB unweighted; 101.1 dB A-weighted; Right 97.2 dB unweighted; 100.3 dB A-weighted

**Total Harmonic Distortion + Noise:** Left 0.0042% at 0 dB, 1 kHz; 0.0034% with 23 kHz filter; Right 0.0034% at 0 dB, 1 kHz; 0.0024% with 23 kHz filter

**Intermodulation Distortion:** Left 0.011% at 0 dB, 0.048% at -10 dB; Right 0.0046% at 0 dB, 0.010% at -10 dB

**Channel Separation:** Left 94.3 dB; Right 94.3 dB at 1 kHz

**Line-Out Level:** 2.5 V

**Output Filter Type:** Digital; Two-times oversampling.

**No. of D/A Converters:** 2

**No. of Pickup Beams:** 3

**No. of Programmable Selections:** 15

**Maximum Search Time:** 4 seconds

**Audible Fast Search:** Yes

**Indexing:** Display only

**Remote Control:** Yes (supplied)

**Disc Loading:** Front drawer

**Headphone Jack:** Yes, variable

**Power Consumption:** 25 W

**Dimensions:** 2.9 X 16.9 X 12.6 inches

**Weight:** 11 lbs

**Price:** \$649

**Address:** Shure Brothers Inc.

Hartrey Ave.

Evanston, IL 60202

On the test bench, the D6000 yielded respectable numbers. Frequency response was great; it was ruler flat to 16 kHz. Then both channels dropped to -0.1 dB at 18 kHz, and -0.2 dB at 20 kHz. Frequency response doesn't get much better than this.

Left channel separation measured 97.6 dB at 100 Hz, 94.3 dB at 1 kHz, 77.1 dB at 10 kHz, and 72.3 dB at 20 kHz. Right channel separation measured 97.3 dB, 94.3 dB, 77.8 dB, and 73.7 dB at the same four frequencies.

In testing the left channel's linearity, a -2.9 dB output was observed when reproducing -3 dB, -19.8 dB at -20 dB, and -59.2 dB at -60 dB. The right channel measured -2.9 dB, -19.8 dB, and -59.6 dB at the same amplitudes.

The left channel's THD+Noise at 0 dB measured with respect to frequency showed 0.0039% at 20 Hz, 0.0042% at 1 kHz, 0.0070% at 10 kHz, and 0.188% at 20 kHz. The right channel measured somewhat better: 0.0025%, 0.0034%, 0.0079%, and 0.188% at the same four frequencies.

When a 23 kHz low-pass filter was inserted, THD+Noise at 1 kHz measured 0.0034% on the left channel, and 0.0024% on the right.

The left channel's THD+Noise at 1 kHz measured with respect to level showed 0.0058% at -3 dB, 0.028% at -20 dB, and 0.15% at -60 dB. The right channel measured 0.0046%, 0.023%, and 0.12% at the same four amplitudes.

The left channel's SMPTE IM distortion measured 0.011% at 0 dB and 0.048% at -10 dB. The right channel measured better: 0.010%, and 0.046%.

The left channel's de-emphasis error measured 0.17 dB at 1 kHz, 0.43 dB at 5 kHz, and 0.34 dB at 16 kHz. The right channel measured equally at 1 Hz and 16 kHz and 0.53 dB at 5 kHz.

The left channel's S/N ratio measured 97.9 dB unweighted and 101.1 dB A-weighted. The right channel measured 97.2 dB and 100.3 dB A-weighted.

A 1 kHz square wave and single pulse response verified use of oversampling. Positive absolute polarity was observed. Twin tone phase linearity at 200 Hz and 2 kHz showed negligible phase error. A slight offset was observed between 2 kHz and 20 kHz waveforms. Interchannel phase at 20 kHz showed negligible error.

—K.P.



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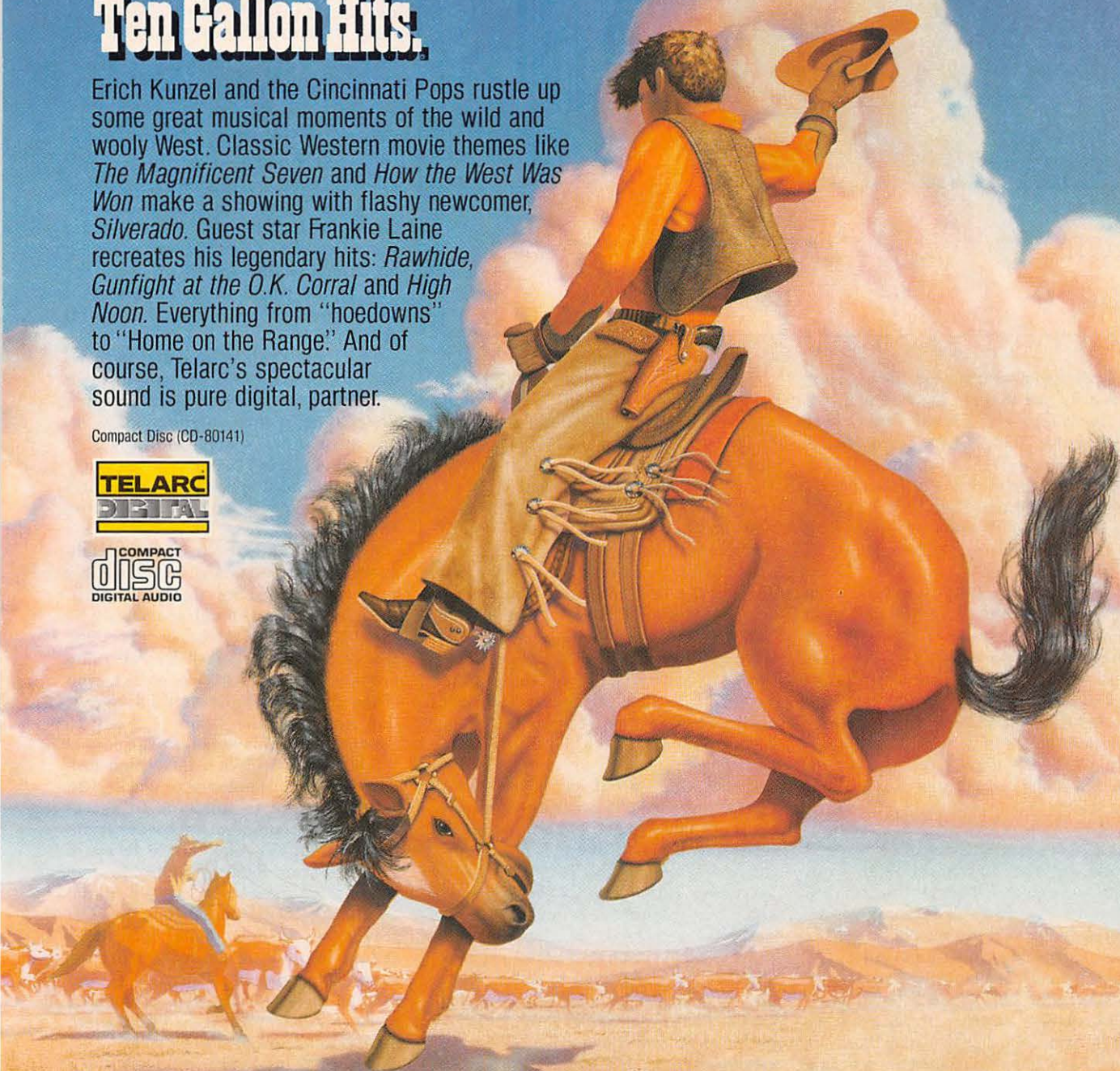
Erich Kunzel and the Cincinnati Pops rustle up some great musical moments of the wild and wooly West. Classic Western movie themes like *The Magnificent Seven* and *How the West Was Won* make a showing with flashy newcomer, *Silverado*. Guest star Frankie Laine recreates his legendary hits: *Rawhide*, *Gunfight at the O.K. Corral* and *High Noon*. Everything from "hoedowns" to "Home on the Range." And of course, Telarc's spectacular sound is pure digital, partner.

Compact Disc (CD-80141)



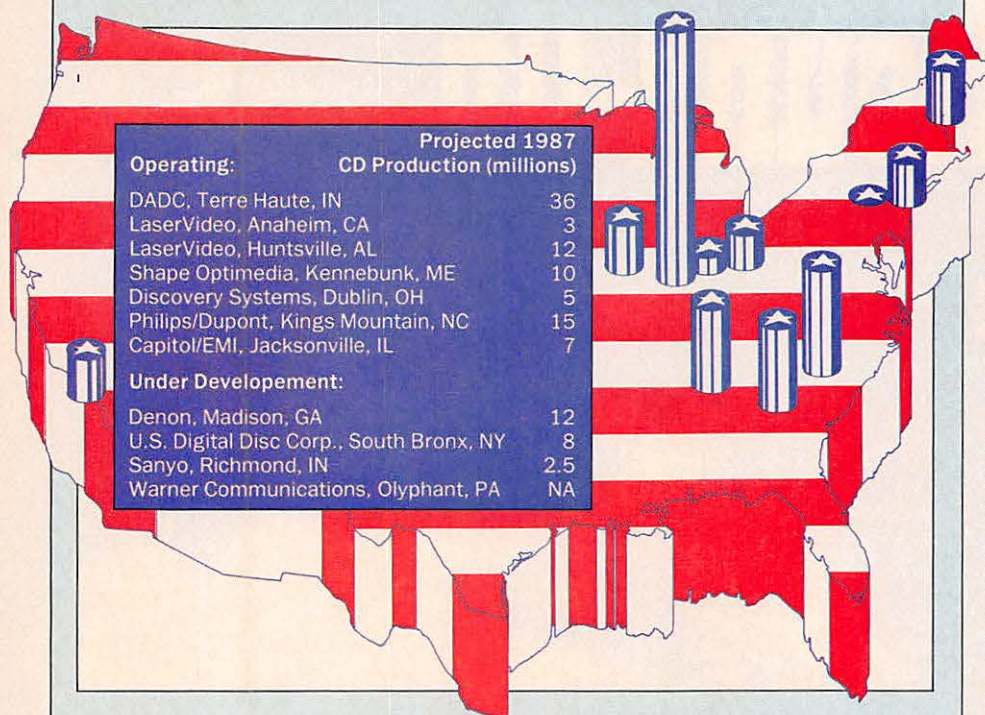
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Circle 137 on reader service card.





# U.S. CD Plants



Continued from p. 27

Building the Huntsville plant was a matter of reproducing the Anaheim model—17-fold. Instead of one assembly line, there will be 17. Each computer-controlled assembly line consists of injection molding, metalizing, coating, and labeling machines that move discs through at a rate of 300-400 per hour.

Construction was confined to where it counted most—renovating the *inside* of the building to suit the highly specialized requirements of CD manufacturing. A large area, the part devoted to actually manufacturing the discs, had to be refurbished for construction of "clean rooms."

## Cleaner Than Clean

Compact Discs must be manufactured in a contaminant-free environment. Stray specks of dust aren't allowed; even one microscopic particle can cause a defect to appear on a CD. So, in true high-tech fashion, the entire manufacturing process takes place on an assembly line sealed off from the rest of the world in an environment 1000 times cleaner than a hospital operating room.

The room itself is long and narrow, and is built so the only access is through a special air "shower" that cleanses your clothes of dust. (Clean room workers must wear special clothing that looks like a cross between a surgeon's garments and a space suit.) You can't enter this space without taking the shower.

After the new room is completely sealed, circulation fans in the room's ceiling are turned on, causing the air in the room to pass through special filters, scrubbing the air free of even the smallest dust particles. The cleaning process takes about two weeks, and when completed, the ventilating system must operate 24 hours a day to ensure that the air remains pure.

Every prospective LaserVideo employee—from maintenance workers to assembly line technicians to secretaries—must complete a six-week training program that includes 48 hours in the classroom. Each "student" takes a series of courses involving the fundamentals of CD manufacturing, how CD players work, how digital recordings are made, and specialized quality assurance techniques. The courses and instruction materials were developed by LaserVideo employees, who also are involved in teaching the classes.

When completed, LaserVideo, Huntsville will be the home of the one and only complete CD manufacturing

Until the fall of last year, the U.S. had only one major CD pressing plant in operation—the Digital Audio Disc Corporation (DADC) in Terre Haute, Indiana (see D.A., January, 1985, p.20)—and three other smaller facilities, each producing less than 2 million discs per year. The rest of the world's 17 CD plants were found in Japan (7) and Europe (6).

Why the minuscule number? Since the companies that invented and standardized the Compact Disc—Sony of Japan and Philips of The Netherlands—were located in Japan and Europe, it was easiest and safest to produce and market the first of these revolutionary products overseas.

In 1982—the early days of CD production and marketing in Europe and Japan—the risks were high. With start-up costs floating around the \$20 million mark, not too many investors wanted to take a chance on what could turn out to be just a flash in the electronic pan.

But for the huge PolyGram record company, everything was to be gained by constructing and operating a CD plant: It would help establish a successful future for the CD, and would guarantee quality control of its product. PolyGram's Compact Disc plant in West Germany still is the world's largest.

The consumer market in Europe and Japan also favored the kind of music—classical—that dominated the CD catalog in the early 1980s. Classical labels such as London, Philips, and Deutsche Grammophon had been making digital recordings for years, and thus had a sizable stock of digital masters waiting for transfer to CD.

While CD pressing plants sprang up all over Europe and Japan, Sony and CBS undertook construction of the Terre Haute plant, which began producing its first CDs in September, 1984. For CD trivia buffs, the first disc off the Terre Haute assembly line was Bruce Springsteen's *Born in the U.S.A.* Today, the facility produces 3 million CDs per month.

In the three short years since the first U.S. pressing plant opened, six more plants have begun operation here, and an additional four are on the way (see graph). The CD manufacturing boom finally has begun, and since the new U.S. facilities each will have greater production capacity than their Japanese and European counterparts, American made CDs no longer will be rarities. Making CDs here also will mean shorter distribution time and more reliable release schedules.

—D.C.V.



operation in the United States, offering all services from disc mastering to packaging to warehousing and shipping.

Yet inevitably, the day will come when an alternative manufacturing technique will be perfected, less expensive and perhaps even more precise than the injection molding process now used. How will huge operations such as LaserVideo handle this potential threat to the millions of dollars invested in current equipment and methods?

"We're not in business to promote

one manufacturing technique over another," says James DeVries, LaserVideo's Chairman and Chief Executive Officer. "We're in business to make the best CDs we possibly can. If another method comes along that can produce CDs of equal or better quality, for less cost, we'll be the first to throw out all the machines you see here and bring in the new ones. We'd be foolish not to."

## Painstaking Technology: Making "The Touch"

At LaserVideo's Huntsville plant, the manufacturing process begins at the "injection molding" stage, where the individual discs are formed (or pressed) from a master called a "stamper." (Prior to this, a recording must be premastered, mastered, and then subjected to an electroforming process, which enables stampers to be formed from a "mother" mold.)

Recordings such as Alabama's *The Touch* come to the plant on video tape. The data on this source tape is then arranged into a standardized format that, when played through a special modulating device, will "tell" a laser beam how to write the data onto a master disc.

The original master disc is a sonically cleaned piece of glass, much larger than a Compact Disc, coated with photosensitive material. As this glass disc is spun on a cushion of air, a laser beam is focused through the modulator.

When the formatted tape containing *The Touch* is played, the modulator interprets the data in a way that tells the laser when to turn on and off. These on/off messages enable the laser to write the patterns of information from

the tape onto the master disc by exposing the photosensitive coating with precise bursts of light. The data is written in a spiral that goes from the inside of the disc to the outside.

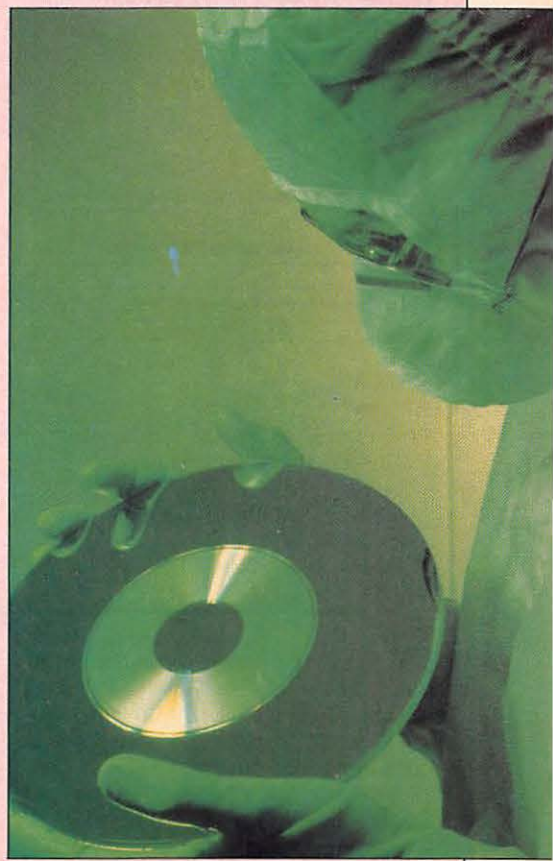
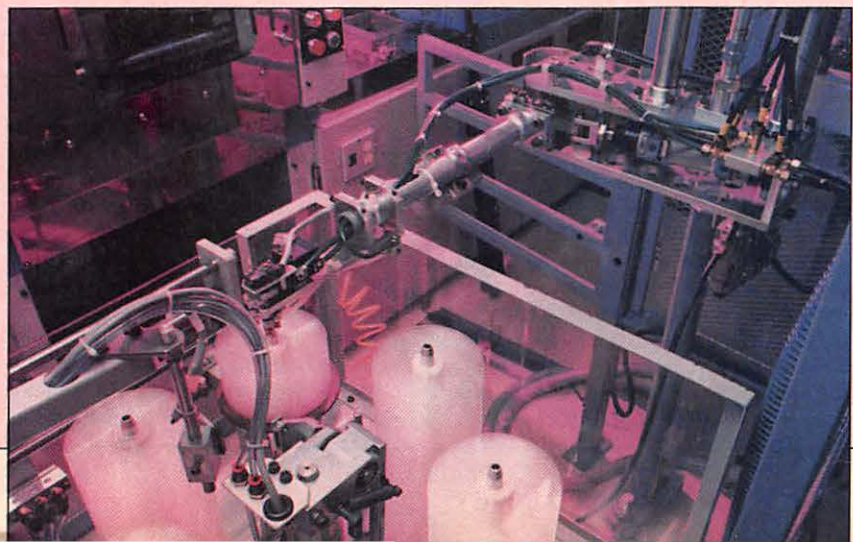
Next, the master disc is washed in a solution that removes all the parts of the photosensitive layer exposed to the laser beam. What's left is a spiral pattern of microscopic "pits" and "land" areas (looking something like Morse code dots and dashes) on the surface of the master. One pit is about five times smaller than an ant's eyelash—about 1/50th the size of a groove on a phonograph record.

Finally, the glass master is placed in a chamber where it is coated with a thin layer of metal. This makes the information-bearing surface of the disc electroconductive. When placed in an electro-plating solution, the metal layer is electrically bonded to the surface of the master, and is thus imprinted with a negative image of the pits.

When the metal layer, or "metal master," is separated from the glass, it is used to form a positive, mirror image of the master—called the "moth-

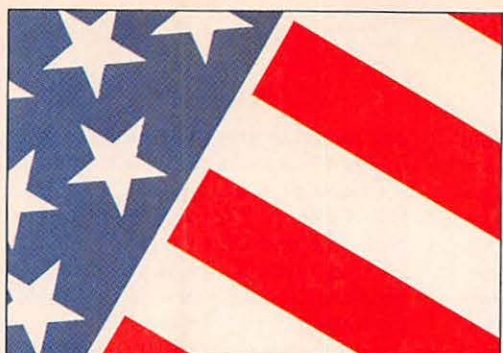
er." The electroforming process is again repeated, this time using the mother to form the part of the mold called the "stamper." This portion contains the valuable data—pits and land areas that preserve every nuance of Alabama's music—that will make the replicas we know as finished CDs.

(For an appraisal of the completed product, see p. 56.)



Above: A LaserVideo, Inc. quality assurance technician visually inspects a Compact Disc master. Left: Compact Discs are stacked by the robotic arm of an injection molding machine.





# COMPACT Disc Reviews

## HOW THEY RATE

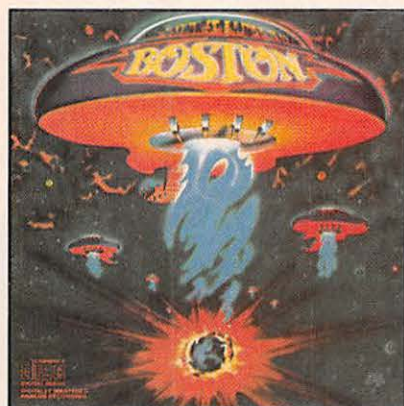
This table explains the numerical ratings—for performance and sound quality—accompanying each *Digital Audio Compact Disc* review.

- 1—Don't buy this disc
- 2-3—Poor; some redeeming value
- 4-5—Passable; flaws balanced by strengths
- 6-7—Above average; strengths overshadow flaws
- 8-9—Exceptional; highly recommended
- 10—Superior; qualities of unusual merit

In keeping with this month's theme, all of our reviews feature discs from American artists and American labels. So, keep your chin up high, hold your hand over your heart, read, and enjoy.



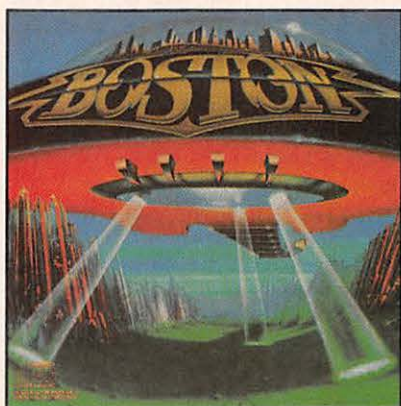
## POP/ROCK



### Boston:

#### Don't Look Back

Producers: Tom Scholz, John Boylan  
 Engineers: Tom Scholz, Warren Dewey  
 Epic EK 34188 (SPARS code not available) 1976 (86)  
 Total disc time: 37:42



### Boston:

#### Third Stage

Producer: Tom Scholz  
 Engineer: Tom Scholz  
 Epic EK 35050 (SPARS code not available) 1978 (86)  
 Total disc time: 33:56



### Boston:

#### Don't Look Back

Producer: Tom Scholz  
 Engineer: Tom Scholz  
 MCA MCAD-6188 (SPARS code not available) 1986 (86)  
 Total disc time: 36:34

You can't find a more pretentious rock band on the charts these days than Boston. They're so caught up with talking about their music and what does or does not go into the making of it that they've lost sight of one of the greatest assets of music in general: variety.

I was one of the millions who played my copy of the band's debut album until the needle bore through to the other side. For this reason alone it's nice to have the disc in hand, and even better

to hear the decent quality of the reproduction.

The fade-in to "More Than a Feeling" instantly reminds me of what a milestone that song was, and it sounds great even today. The organ runs on "Foreplay" still make my fingers tingle, and the segue into "Long Time" sends me back to brighter days. It may be a dance down memory lane, a field trip to one of the monuments of '70s rock and roll, but *Boston* stands the test of time.

The band's brand of rock is a compromise between many styles of the decade, a crossover of heavy metal chordplay and pop-rock structuring. It's an easy blend to bear, and Tom Scholz is certainly no studio simpleton when it comes to production. The debut album's record-breaking success shows that people were willing to take Scholz's advice and "listen to the record!"

That's why even when *Don't Look Back* hit the stores, I continued to listen





to that first release. For one thing, it took two years for the second LP to show up, a fact which doomed it to intense scrutiny in the critics' hands. Then, when it finally did surface, there was nothing there worth scrutinizing.

Everything on the second disc sounds pretty much like the first, except that by now it was beginning to sound redundant. There are the same voicings, the same arrangements, the same stock lyrics, and the same spaceship on the cover. We're talking consistency here.

And consistency it is...right down to the production values and the chart-targeted tunes. Once you start spreading something like this out, it begins to wear thin. *Don't Look Back* has some strong numbers and another pretty instrumental, but for my enjoyment, I'm happier with my headphones blasting *Boston* again.

Time passed, people talked, and eight years later, here comes another spaceship on the cover, this one the proclaimed *Third Stage*. It took them six years to produce this disc. Don't ask me about those missing two years; maybe all the legal hassles involved don't count and make up for the mathematical inaccuracy. Nevertheless, it isn't mentioned on the disc insert, which includes Scholz's essay "For the Technically Curious, or, How to Make a Record in Just Six Years."

It took me just six minutes to form my first opinion of this disc: After reading the pretentious tripe on the packaging, I wanted nothing to do with this one: "No synthesizers used..." Who cares? Of course, they did use gadgets and filters and other sound processing effects on the instruments...what's that if it isn't synthesis? For my money, it would have been nice to hear some synthesizers here and there, if only to relieve the abysmal monotony of arrangements on this disc.

Boston fans will have no trouble recognizing a lot of the music on *Third Stage*. In "The Launch," we're treated to a rehash of "The Journey" from *Don't Look Back*. And "My Destination" is a rearrangement of the disc's first and best track, the ballad "Amanda." The music lasts less than 37 minutes, and already we're encountering additives and preservatives.

Those are only the blatant examples, too. Time and again you'll hear the same mulchmower guitar licks, the same chord progressions, the same whining harmonies singing the same lyrics (and why, oh why, do they even print the superfluous "ooohs" and "ohs" on the lyric sheet? As if the words weren't vacu-

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ous enough...). It's too bad the production quality isn't as good as it was on the previous two efforts. The sound may be reasonably clear, but the mixes are pretty unimpressive.

So back I go again to that first disc, where I can relive the old days without embarrassment. It took six years to

make *Third Stage*—six years to rework songs that were reworked material to begin with. It's hard to believe, and yet people are buying it. If someone has to work that hard at sounding mediocre, it should be an obvious sign to all of us. Let's just hope this stage is the last.

Hugh S. Coyle



#### Bob Dylan/The Band: Before the Flood

Producer: Not listed

Engineers: Phil Ramone, Rob Fraboni

CBS C2K 37661 (AAD) 1974 (86)

Total disc time: 92:40 (two-disc set)

*Before the Flood*, recorded during concerts in 1974, finds Bob Dylan rearranging an impressive menu of his own classics. Some of Dylan's strongest work is here—"Don't Think Twice, It's All Right," "Like a Rolling Stone," "Highway 61 Revisited"—but these live versions are considerably removed from the studio tracks.

In most cases, Dylan quickens the tempo and adds more kick. The revisions don't necessarily improve on the originals, but they're intriguing nonetheless.





"Blowin' in the Wind," for example, has a bizarre and electric sense of power, resulting partly from Dylan's all-out vocal and partly from Robbie Robertson's inspired guitar solo. "Lay Lady Lay" takes on a gripping urgency, and "It Ain't Me Babe" becomes a raunchy rocker. Dylan also restyles "Just Like a Woman," "Most Likely You Go Your Way" (a surprisingly effective opener), "Knockin' on Heaven's Door," and several others.

The Band takes center stage on eight of the 21 tracks. They turn in a spiritual, intense version of Dylan's "I Shall Be Released" and close-to-the-cuff versions of "The Night They Drove Old Dixie Down," "The Weight," and others.

The production of *Before the Flood* is everything you'd expect from a mid-'70s rock show: loose, rugged, and at times ragged. Despite those characteristics, the disc sounds amazingly clean. Dylan's vocals are open and well-defined on most of the tracks, and the guitars, keyboards, and rhythm section—while obviously not digitally recorded—are detailed and only occasionally obscured.

Sonic flaws include a nasty, jarring dropout on "Don't Think Twice," fuzzy guitars here and there (The Band's "Endless Highway," for example), and harsh sections (as on the harmonica in "Just Like a Woman"). Otherwise, the CD does surprisingly well in preserving some fascinating music.

Larry Canale



#### Linda Ronstadt:

##### 'Round Midnight

Nelson Riddle & his Orchestra

Producer: Peter Asher

Engineer: George Massenburg

Elektra/Asylum 60489-2 (AAD/DAD)

1982-86 (86)

Total disc time: 121:50 (two-disc set)

If you're drawn to Linda Ronstadt's steamy series of torch ballads performed with Nelson Riddle & his Orchestra, *'Round Midnight* is the package to buy. The 32 tracks here come from Ronstadt's *What's New* (1983), *Lush Life* ('84), and *For Sentimental Reasons* ('86).

Elektra has kept all of the original tracks, adding no new songs. The advantage here is that this collection comes in a convenient two-disc set, instead of on three separate CDs.

Another advantage is the uniformly crisp and lifelike sound. Engineer George Massenburg has managed to make almost every track sound as if it came from one session, even though *What's New* and *Lush Life* were recorded on analog equipment.

Which brings up the odd SPARS code—this is probably the only "AAD/DAD" disc in existence. By way of explanation, *What's New* and *Lush Life* were analog recordings transferred to digital tape at the mastering stage. *For Sentimental Reasons* was recorded digitally but mixed on analog recorders before being transferred back to digital tape for mastering.

Despite the unusual chain of events, little is lost; Ronstadt's voice and Riddle's accompaniment sound amazingly real. There's no discernible noise in the way.

A few tracks from *What's New* reveal hints of tape hiss, but it's never annoying. For the most part, the *What's New* songs are dynamic and clean. The *Lush Life* section is even more impressive, coming close to the digital exactness of *For Sentimental Reasons*. On tracks such as "When I Fall in Love" and "It Never Entered My Mind," Ronstadt's voice is open and revelatory, and the strings are sweet and fittingly lush.

On the *For Sentimental Reasons* cuts, the sound is painstakingly clean—there are, however, some hints of harshness in the highs (as on "Little Boy Blue" and "My Funny Valentine").

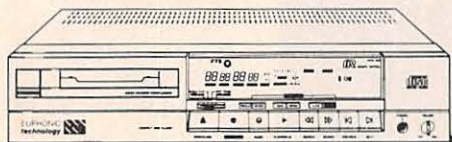
Fans of Ronstadt's country-rock style probably have given up on her by now. This material is slow-tempo, romantic balladry. But these performances should excite anyone with an appreciation for standards penned by the likes of George Gershwin ("I've Got a Crush on You," "Someone to Watch Over Me," "But Not for Me"), Rodgers & Hart ("It Never Entered My Mind," "My Funny Valentine," and others), and Hoagy Carmichael ("I Get Along Without You Very Well").

Ronstadt also tackles other favorites such as "When You Wish Upon a Star," "I'm a Fool to Want You," "What's New," and Irving Berlin's oldie, "What'll I Do."

The only problem you might have with *'Round Midnight* is in programming the second disc. The liner notes number

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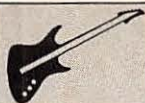
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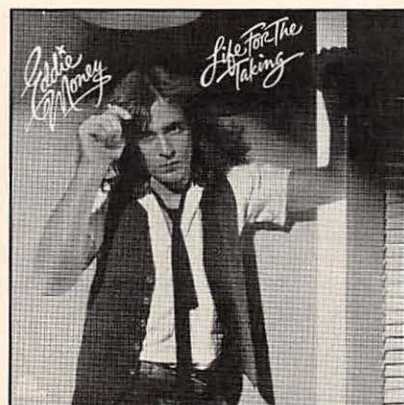


the songs on Disc 2 from 16 to 32. Your CD player will start at track 1—not track 16. So shuffling songs isn't easy—if you want track 29, for example, you have to program number 14.

Otherwise, *'Round Midnight* would be great for fans of jazz, of '30s, '40s, and

'50s music, of Nelson Riddle's elegant arranging, and of Ronstadt's increasingly versatile vocal abilities. For Ronstadt, the change in direction has been a risk, but *'Round Midnight* shows that she's become comfortable with classic crooning.

Larry Canale



#### Eddie Money:

##### *Life for the Taking*

Producer: Bruce Botnick

Engineer: Andy Johns

Columbia CK35598 (AAD) 1978 (86)

Total disc time: 40:42

On Yoko Ono's *Every Man Has a Woman Who Loves Him*, Eddie Money gave a powerful reading of her "I'm Moving On." His soulful singing brought out the best in the well-crafted song. If Money had more tightly written material to work with, he'd probably be a bigger star.

The New York native runs hot and cold when it comes to solo and collaborative songwriting, as *Life for the Taking* shows. About half of the 10 tracks on Money's second release fall



#### The Readers' Choice

## YOUR POP/ROCK FAVORITES FOR MARCH

#### THIS MONTH

##### LAST MONTH

- 1 1 Bruce Springsteen & the E Street Band: *Live 1975-1985* (CBS C3K 40558)
- 2 8 Boston: *Third Stage* (MCA MCAD-6188)
- 3 3 Billy Joel: *The Bridge* (CBS CK 40402)
- 4 4 Peter Gabriel: *So* (Geffen 24088-2)
- 5 7 Paul Simon: *Graceland* (Warner Bros. 25447-2)
- 6 2 Joe Jackson: *Big World* (A&M CD 6021)
- 7 6 Laurie Anderson: *Home of the Brave* (Warner Bros. 25400-2)
- 8 12 Anita Baker: *Rapture* (Elektra 60444-2)
- 9 — Steve Winwood: *Back in the Highlife* (Island 25448-2)
- 10 5 Dire Straits: *Brothers in Arms* (Warner Bros. 25264-2)
- 11 9 Kate Bush: *Hounds of Love* (Capitol CDP 46164)
- 12 10 Rush: *Power Windows* (PolyGram 826 098-2)
- 13 19 The Police: *Every Breath You Take—The Singles* (A&M CD-3902)
- 14 — Bruce Hornsby & the Range: *The Way It Is* (RCA PCD1-8058)
- 15 — Huey Lewis & the News: *Fore!* (Chrysalis VK 41534)
- 16 11 Barbra Streisand: *The Broadway Album* (CBS CK 40029)
- 17 13 Sade: *Promise* (CBS RK 40263)
- 18 — Madonna: *True Blue* (Sire 25442-2)
- 19 18 Talking Heads: *Stop Making Sense* (Sire 25186-2)
- 20 — Linda Ronstadt: *For Sentimental Reasons* (Asylum 60474-2)

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into the generic rock category. There is plenty of grinding guitar and thumping bass, but it's nothing that hasn't been heard before. The remaining songs are more fun. The hit "Maybe I'm a Fool," demonstrates Money's playful side, and "Nobody" is a great piece of party rock.

Money has a split personality throughout the disc. On many of the songs he is an intense, fatalistic teenager, primping before the mirror as he prepares to mount his motorcycle for a night on the town. At other times he sounds like a jaded adult who has learned how to laugh at his own shortcomings. The latter role is much more endearing.

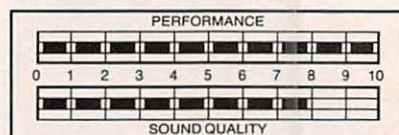
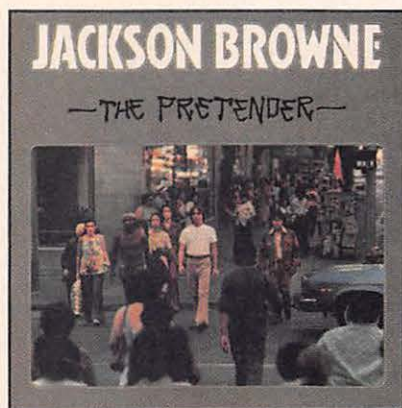
His band seems to agree; they really come alive on the breezier songs. Listen to the harmonica work and hand-clapping on "Maureen." Check out the spirited piano playing and background singing on the jaunty "Nobody." Then compare it to the droning sound of "Can't Keep a Good Man Down." The title track

is extremely intense, but the intensity works because the song has an autobiographical flavor. When Money sings "The big boys used to beat me up a bit," it sounds like he means it.

The sound quality isn't objectionable, but it's nothing to write home about either. After all, Money is

essentially a garage band rocker, and garage bands have never been known for great clarity or precision. Look at it this way, you won't need to go out and buy a pair of \$1000 speakers to enjoy this disc. So program around what you don't like and have a good time.

Alan Citron



#### Jackson Browne: The Pretender

Producer: Jon Landau

Engineer: John Haeny, Paul Black, Mark Howlett, Greg Ladanyi

Elektra/Asylum 6E 107-2 (AAD)

1976 (86)

Total disc time: 35:29

*The Pretender*, Jackson Browne's stirring chronicle of life's hopeless and uncertain moments, has been long overdue as a CD. But finally, Elektra/Asylum comes through (with the entire Browne catalog, in fact). For the most part, it was worth the wait.

The only real problem with *The Pretender* on CD is its packaging. The CD booklet is a crime. It lists only the performers and recording credits—not the lyrics (which are included with the LP). Since Browne's songs are driven by his words, this shortcut does not go unnoticed.

More forgivable is the thin bed of analog tape hiss on most of the disc, as well as the occasional upper-range harshness. These flaws are minor, especially in contrast to the incredible clarity in Browne's vocals.

The impressive detail of the CD opens Browne's voice. You'll rediscover emotions that have long since worn into the LP's grooves: Browne's sincerity in "Daddy's Tune" and "The Only Child," his anger/acceptance in "The Pretender," and his pain in "Sleep's Dark and Silent Gate"—a song of desperation written after his wife's suicide.

On the whole, *The Pretender* is not a happy album. Death, a longing for reconciliation, and the acceptance of the world as it is dominate Browne's lyrics. The idealism of his earlier work is gone. He writes in "The Fuse": "The years give way to uncertainty, and the fear of living for nothing strangles the will."

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All of these songs rank among Browne's quintessential compositions. But the title cut is the best track here. In fact, it's arguably the performer's finest moment as a songwriter.

"The Pretender" is a transitional song for Browne, who admits he's "caught between the longing for love and the struggle for the legal tender." In the end, the latter wins out as he resolves to be a "happy idiot"—to blend in with the rest of the world.

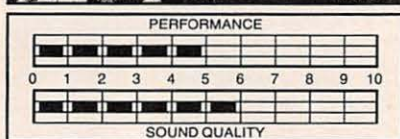
One constant on Browne's discs is the musicianship. On *The Pretender*, he gets support from a top-notch group of players. In particular, both Jeff Porcaro on drums and Craig Doerge on keyboards shine on this disc. Also, the "Daddy's

Tune" horn section—almost unnoticed on LP—really comes to life on CD.

Browne enlists some impressive harmony vocalists—Lowell George, Bonnie Raitt, Rosemary Butler, Don Henley, David Crosby, and Graham Nash—and the digital remastering brings them through loud and clear.

Jackson Browne's music is never the same after *The Pretender*—not better or worse, but simultaneously more experimental and more mainstream. If you're a Jackson Browne fan, this is a must. If you're interested in exploring his music, *The Pretender* is a clean, well-produced disc that shows the artist at his best.

Larry Canale, Dan Muse



#### Billy Joel:

##### *Cold Spring Harbor*

Producer: Artie Ripp

Engineers: Bob Hughes, Michael Stone, John Bradley

CBS CK 38984 (AAD) 1971 (86)

Total disc time: 30:14

The CD version of *Cold Spring Harbor* is closer to what Billy Joel had in mind for his first album than what was actually released. The fabled story of Joel's debut involves a dubious engineering job that resulted in speeded-up master tapes. The flaw gave Joel a chipmunk voice on many of the tracks (especially "You Look So Good to Me"), so CBS quickly recalled the album—almost before it was released.

The version in stores now—on CD as well as LP—comes from a 1983 remixing

session by Larry Elliott and original engineer Artie Ripp. It's at least four minutes shorter than the original (most of the edited material was chopped from the end of "Tomorrow Is Today"), but it sounds much better.

Joel's voice is more recognizable and less adolescent on the corrected version, but a few chipmunk traces do remain. Also, the remixing couldn't remove all of the analog tape hiss, nor could it "decompress" the sound. The overall result is still an improvement, adding detail and a new clarity to the recording—especially on "She's Got A Way."

Joel's musical direction wasn't quite as clear. He wrote *Cold Spring Harbor* after stints with the Hassles and Attila, a pair of hard rock groups. This disc heads for the other extreme—light pop and soft rock.

Despite moments of fluff ("Why Judy Why"), this is still worth having if you're a Joel fan. There are several hints of the appealing folk-rock style that would dominate Joel's later *Piano Man* ("Everybody Loves You Now"), along with some pleasing balladry that would become a Joel trademark ("She's Got A Way").

Even these two highlights, though, aren't definitive; Joel included excellent concert versions of both on his 1981 live album, *Songs in the Attic* (see review p. 53).

Also recommended here are "Falling of the Rain" (the kind of symmetrical ballad Joel perfected later on "Summer, Highland Falls" and "This Is the Time") and "Nocturne" (an instrumental with classical strains). But for the most part, this material is undeveloped.

Larry Canale

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### Dion, Dion and the Belmonts: Dion Hits

Producer: Gene Schwartz  
Compilation: Trevor Churchill  
Ace Records CDCH 176 (AAD)  
1958-63 (86)  
Total disc time: 45:59

Dion DiMucci has one of those unique voices: His pitch ain't perfect but his heart is true. He can moan, scat, and wail with the best of them. He's equally convincing as a plaintive "Lonely Teenager" and as "The Wanderer" (with "two fists of iron").

With the Belmonts (Carlo Mas-trangelo, Fred Milano, and Angelo D'Aleo), Dion recorded some great doo-wop classics. I learned to sing doo-wop by mimicking "I Wonder Why" and still consider it among the greatest songs of its genre. "Where or When" and "A Teenager in Love" were top-five hits and deserved to be. This *Dion Hits* CD includes nine of the best tracks by Dion and The Belmonts as well as nine tracks by Dion on his own.

Late in 1961, about a year after he and the Belmonts parted company, Dion uncorked one of the best one-two punches in the history of rock and roll: "Runaround Sue" and "The Wanderer." "Sue" combines the party atmosphere of "Quarter to Three" with a memorable story and a knockout vocal performance. (An added bonus in 1961 was the transparent euphemism of "she goes out with other guys.") "The Wanderer" is equally transcendent: a fully realized, bluesy, gutsy, bravado image that cooks over a driving rhythm. These two tracks are standouts among the

many revelations on the *Dion Hits* CD.

The digital remastering here is a work of art. With a few exceptions, the original master tapes were state-of-the-art for their time (1958-1962), and it shows. For this CD, Ace Records brought in Gene Schwartz, the original producer, to help reconstruct the ambience of the original masters from first-generation tapes. As a result—unlike Dion compilations you may have heard that use third- or fourth-generation masters—*Dion Hits* sounds really good from start to finish.

An "open" high end, clear definition, and little hiss when Dion sings alone, all add beautifully to the digital mix while not destroying the original analog ambience. Ace records definitely accomplished what they set out to do.

David Greene



### Ric Ocasek: This Side of Paradise

Producers: Chris Hughes, Ric Ocasek, Ross Cullum  
Engineer: Joe Barbaria  
Geffen 24098-2 (AAD) 1986 (86)  
Total disc time: 50:13

Ric Ocasek's first solo album, *This Side of Paradise*, has plenty of the Cars' characteristics: a choppy new wave beat, some killer pop hooks, and Ocasek's distinctive vocals.

And like most of the Cars' albums, *This Side of Paradise* has generally strong material, including one of the best singles of 1986 ("Emotion in Motion"), a couple of catchy chart candidates ("Keep on Laughin'" and "True to You"), and a chiller of a rock ballad (the eight-minute title track, which features a deliberate drum beat, funereal keyboards, and biting lyrics).

Mixed in with the highlights are a few indistinguishable forgettables, but most of the music here is solid, tight '80s power/pop.

The playing is even stronger, thanks in part to the familiarity factor: Most of the Cars' lineup appear on *This Side of Paradise*. Greg Hawkes handles keyboards and bass on every track, Benjamin Orr contributes backup vocals on three tracks, and Elliott Easton adds his guitar licks on "True to You."

Only drummer David Robinson doesn't contribute, but Ocasek does employ several "name" guests on various tracks, including guitarists Roland Orzabel (Tears For Fears) and G.E. Smith (Hall & Oates).

Ocasek and his crew's performance is neatly recorded by engineer Ross Cullum, resulting in crisp, clean sound. At times ("Look in Your Eyes," for example), Ocasek's vocals are too recessed, and slight traces of hiss pop up during quiet moments. But most of the disc is sonically fresh and alive.

Larry Canale



### Benjamin Orr: The Lace

Producers: Mike Shipley, Ben Orr, Larry Klein  
Engineer: Mike Shipley  
Elektra/Asylum 60460-2 (AAD)  
1986 (86)  
Total disc time: 45:05

Ric Ocasek's steering of the Cars doesn't leave much room in the driver's seat for bassist Benjamin Orr—except for a lead vocal here and there. This prompted Elektra/Asylum to encourage Orr's first solo album, *The Lace*—a neat



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ly polished, sometimes explosive sampling of hot pop and rock.

Ocasek's influence is obvious on many of the tracks here as Orr mixes choppy chunks of guitar with a tough backbeat, his ideal lead vocal, and rich layers of harmony vocals. Still, *The Lace* is anything but rehashed Cars.

Orr's compositions (he cowrote all 10 tracks with Diane Grey Page) are fresh and lively, starting at the top: "Too Hot To Stop" is a relentless, whirling blast of rock'n'roll. Likewise, "Stay the Night" and "Hold On" are stimulating and sensible singles, and "Skyline" is as smooth and zesty as anything the Cars have done.

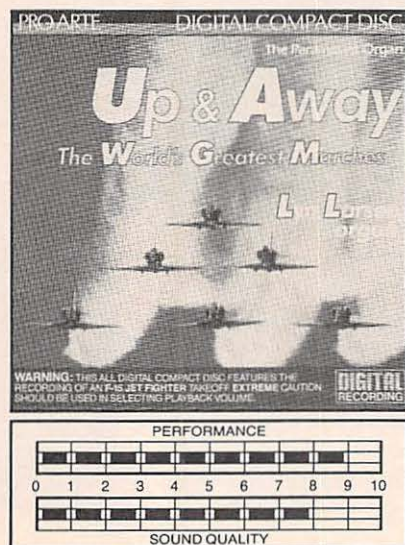
Throughout *The Lace*, Orr shows he's as effective with uptempo new-wave-flavored pop (as on "In Circles") as he is with hook-laden rock ballads (as on the disc's highlight: the lilting, majestic "This Time Around"). Simply put, Orr comes only a few tracks shy of a perfect 10 pop album.

The sound is also near-perfect. Orr, Mike Shipley, and Larry Klein account for some splendid producing. Shipley and Thom Moore's mixing and engineering are top-notch. The disc's tonal quality is crisp and alive, and Orr's rich vocals—though at times slightly recessed—are well-captured and distinctive.

The guitars—some handled by Carmate Elliot Easton—and keyboards sound crisp throughout. Orr's bass is generally CD-solid. Even the drum programming sounds live. And with the surfaceless background, this is one analog recording you could actually mistake for "DDD."

Ultimately, you don't have to be a Cars fan to get into *The Lace*. This is a powerful and substantive recording—one of this year's genuinely pleasant surprises. And no, it doesn't mean the end of the Cars. Elektra/Asylum expects a new release from the Boston-based group later in '87.

Larry Canale



#### Paramount Theater Organ: Up & Away, The World's Greatest Marches

Organ: Lyn Larsen  
Composers: Various  
Producer: Steve Vining  
Engineer: Robert Ridgeway  
ProArte CDD 281 (DDD)  
Total disc time: 55:13

This is a superb CD of 14 marches from the restored Paramount Theater Organ, now in Wichita. This Wurlitzer organ, with 3500 pipes and 360 stops on the console, is one of the crowning achievements in theater organs.

Theater organs were a big deal in the early '20s. I used to enjoy them as a youngster in between movie showings. The larger theaters had organ con-

certs and bouncing-ball sing-alongs; smaller theaters had vaudeville.

It took four years and 12,000 hours of volunteer labor to get this grand old organ set up in Wichita. Wait'll you hear this baby! The only way you can really hear an instrument like this is on a CD. LPs just can't handle either the frequency or the dynamic range.

Lyn is a master of the organ, so you'll enjoy these marches. This is the first CD version of The Eric Coates' "Knightsbridge March" I've found. It's all there, down to the "Stars and Stripes" finale. An F-15 jet takeoff on the first track is a bonus—if your system can handle it.

"National Emblem," "Double Eagle," "Radetsky," "Washington Post," and "Siamese Children" from *The King and I* are all here... a great collection.

Wayne Green



#### Alex Chilton:

Stuff  
Producer: Alex Chilton  
Engineers: John Hampton, Phil Chapman, Joe Hardy, Terry Manning  
New Rose 68 CD (AAD)  
Total disc time: 56:56

Those who believe the Memphis sound died in the '70s—when Stax records went bankrupt and Al Green turned his back on secular music—should give Alex Chilton's *Stuff* CD a listen. Alex Chilton was the vocalist for the Memphis group, the Box Tops, fronting such '60s classics as "The Letter," "Cry Like A Baby," and "Soul Deep." He later was the founder and motivating force behind Big Star, a

group that had enormous influence on the new wave music that came later. Chilton has become something of a cult idol on the new wave scene, and he packs clubs that cater to that music. Which is curious because Chilton's sound is much closer to the loose, funky Stax groove than, say, The Sex Pistols.

The first nine tracks on the disc are Chilton's latest recordings, and they comprise his best material since the halcyon Big Star days. "No Sex," for example, is an acid diatribe about AIDS. The horn arrangements are tight and sharp, just like the punctuation the BarKays, the Mar-Keys, and Memphis Horns provided in the past. "Underclass" has raw, chunky blues chords with Chilton's warbly, teenage vocal riding over all. Jim Spake adds a shot of smoking sax to the mix. "Tee Ni Nee Ni Noo" and Carla





Thomas's "B-A-B-Y" are pure essence of Memphis soul. "Lost My Job" and "Paradise" are two fine Chilton originals.

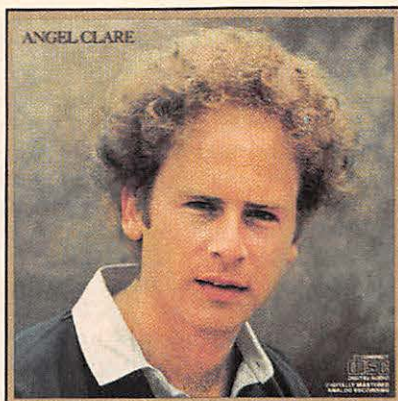
Three songs from Chilton's troubled period—after Big Star's demise until about three years ago—are added. These songs are erratic and have an amateurish garage-band quality far removed from his best work.

The last four tracks are real plums from unreleased solo sessions Chilton did between the Box Tops and Big Star periods. While they do not surpass the mastery of the Big Star albums, they are substantial.

The sound quality of the disc rates an eight as much for feel as for engineering excellence. In fact, the loose, after-hours ambiance of the disc is almost palpable. The drums alone deserve a 10 rating. Doug Garrison plays the skins in a style that would do Booker T and the MGs' Al Jackson proud.

Alex Chilton has had a curious career full of peaks and valleys. He seems to be riding high now. One can only hope he continues recording in this vein.

Tom Graves



Art Garfunkel:

Angel Clare

Producers: Arthur Garfunkel, Roy Halee

Engineer: Roy Halee

Columbia CK 31474 (SPARS code not available) 1973 (86)

Total disc time: 38:30

*Angel Clare*—on CD, album or cassette—leaves much to be desired. Still, Columbia Records has seen fit to release Art Garfunkel's first solo attempt on CD—neither a classic of its genre nor a sonic revelation—while (as of this writing) Paul Simon's first three solo releases—all excellent—remain unavailable.

*Angel Clare* is not without its small merits. Garfunkel sure does sing prettily, if soullessly. And Roy Halee's production, while overblown, achieves a certain Spectorish "wall of sound." "All I Know" even strives for the same grandiose stateliness as "Bridge Over Troubled Water," and comes close. Other than that, there's little to recommend this disc. Even the sound quality is poor, with an overall muddiness that isn't noticeably improved on CD.

Much of *Angel Clare* is downright insipid, with Garfunkel's painfully sweet and gentle voice becoming a major annoyance over the course of an entire disc. In the past, Paul Simon's sense of humor and his Rhythm-and-Blues influences tempered Garfunkel's artiness. On his own, Garfunkel's saccharine delivery is taken to its extreme.

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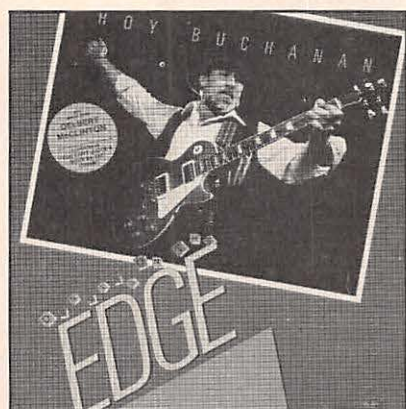




An analogy: Remember the scene in *Animal House* where Bluto, wandering around a toga party, meets up with a mawkishly sentimental folkie serenading two girls on the staircase? Bluto listens attentively for a few seconds, then grabs the guitar from the serenader, raises it high over his head, and smashes it to pieces on the bannister. Then he tramps off to dance away his college angst to the sound of sweet soul music.

If only Bluto were at Art Garfunkel's recording session. After ten minutes of *Angel Clare*, I get an urge to push eject and put on something with a little more backbone.

Scott Belford



**Roy Buchanan with Delbert McClinton:**

**Dancing On the Edge**

Producers: Roy Buchanan, Bruce Iglauer, Dick Shurman  
Engineer: Justin Niebank  
Alligator ALCD 4747 (AAD)  
Total disc time: 38:50

Roy Buchanan is without peer as a lead electric guitarist. He can coax a huge variety of sounds from his guitar, from a woman's high-pitched shriek to basso shouts of men quarreling in a barroom. The problem with Buchanan, as with so many other guitar heroes, is that he doesn't know how to hang back. He has only one speed—flat out.

For example, his guitar attack on the opening cut "Peter Gunn" can peel the paint off bricks. But he exhausts every last one of his tricks in the

first two minutes. There are none of the dynamics and nuances of Henry Mancini's original score in this cover version. All through this disc the backing instruments are not distinctive enough in the mix. The guitar, center-pieced throughout, sounds fine. So do the generic overrecorded studio drums of Morris Jennings. Everything else, however, suffers.

Pairing Roy Buchanan's smoking guitar with Delbert McClinton's whiskey-soaked vocals on three of the disc's tracks seems inspired. However, the material chosen does not carry enough weight to spark interest in this listener. "The Chokin' Kind" is not that bad, it's just not that good. Willie Dixon's blues classic, "You Can't Judge a Book By the Cover," is enjoyable enough. But there are at least five versions that come to mind that are preferable. On "Baby, Baby, Baby," even the reliable McClinton lets us down with a lackluster, uninspired vocal.

On "Jungle Gym" Buchanan churns out a few thousand more stinging licks to a backing track that sounds like a herd of elephants. Roy, who couldn't carry a tune with a fork lift, unfortunately sings on two tracks. Bad mistake. Even his one allotted "pretty" song, "Matthew," is a bore.

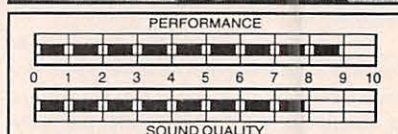
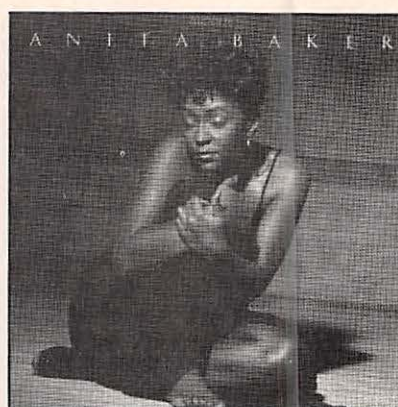
Why do so many great guitarists suffer from this draining overkill? After all, Albert King recorded some of the funkier blues guitar ever for Stax records in Memphis. He had outstanding material and he never overreached himself. Why can't Alligator records see this and work Roy (and Johnny Winter) into a groove?

Roy Buchanan's best material is still to be found on *Loading Zone*, which was carefully and lovingly produced by Stanley Clarke. Perhaps Clarke's own stunning virtuosity challenged Buchanan creatively.

One can only remember wistfully the PBS television documentary that pushed Buchanan into the spotlight. It showed a quiet, humble man who played guitar in his country church and had become a word-of-mouth legend among blues and rock musicians. He was shown with Merle Haggard and Shuggie Otis, both of whom seemed awed by his talent.

It's too bad this legend has to resort to chronic guitar show-boating. He's much too good for this.

Tom Graves



**Anita Baker:**

**Rapture**

Executive Producer: Anita Baker  
Producers: Michael J. Powell, Marti Sharron, Gary Skardina  
Engineers: Barney Perkins, Gary Skardina, Robert Feist  
Elektra/Asylum 60444-2 (AAD) 1986 (86)  
Total disc time: 37:35

Anita Baker created one of 1986's pleasant surprises—the swaying, full-sounding, aptly titled *Rapture*. This romantic collection of soul-influenced soft rock sweats with emotion. Baker's rich voice glides, twists, turns, melts, and soars in every direction.

Baker is at her best on the opening track, the single "Sweet Love"—one of three tracks she wrote or co-wrote. "Sweet Love," with her desperate but soothing vocal, has the irresistible atmosphere of the Motown classics.

Also highly recommended are "Caught Up in the Rapture," "No One in the World," and "Mystery." This isn't the type of disc you'll need to program around. Just push play (and repeat) on your CD player and let the music mesmerize.

The Compact Disc is the ideal medium for a voice as sultry as Baker's. Sure, the midrange could be more distinct and the high notes could be less compressed. But producer Michael Powell's blending of Baker's flowing vocals into the keyboards and percussion is not only effective, it's downright captivating.

From the soft, attractive cover photo to the last powerful note on Baker's own rhythm'n'pop song "Watch Your Step," *Rapture* is an enchanting experience.

Larry Canale





### Billy Joel:

#### **Songs In The Attic**

Producer: Phil Ramone

Engineer: Elliot Scheiner, Jim Boyer

Columbia CK 37461 (AAD) 1981 (86)

Total disc time: 48:18

Billy Joel recorded some of his best songs before his smash album, *The Stranger*. But because of his limited success with these early releases, he didn't have the power to record them his way. The result was a slightly sterile, more reserved sound that didn't fit the singer or the songs. *Songs In The Attic* rectifies the situation, showcasing Joel's early music as he originally intended it to sound.

The result is phenomenal. The 11 songs on this live disc ring with passion and vitality. Anyone who has seen Joel in concert will recognize the extra charisma and power of the singer's live performances. These lesser-known songs seem to spring to life.

Playing solo, Joel caresses his piano on the lilting "She's Got A Way." He becomes the sarcastic and somewhat vengeful minstrel on "Everybody Loves You Now"—with the rock-steady power of the song accentuated by Liberty DeVitto's driving drums. "Say Goodbye to Hollywood"

packs the wallop of an anthem. And throughout the disc, Joel's band stands strongly behind him, precise and powerful.

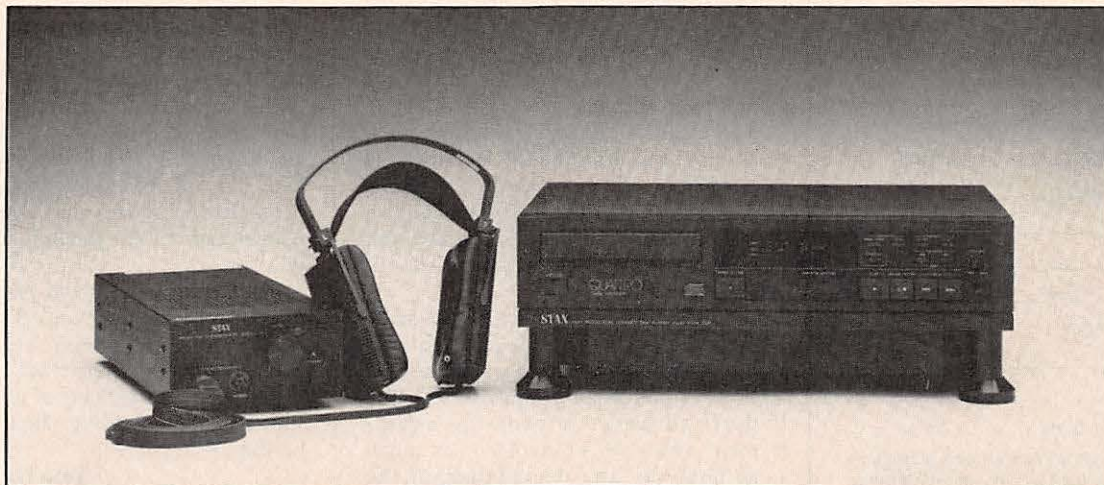
In the extensive liner notes, Joel explains that the songs were recorded during several performances, in a variety of ambiances. Some songs sound better in a big hall, while others benefit from the intimacy of a nightclub. The only cut that doesn't seem to benefit from the live treatment is "Captain Jack," from *Piano Man*. But this has less to do with the performance than the song's melodramatic theme of a college kid on drugs.

If you're a Billy Joel fan, this is the disc to buy. The sound is unusually crisp and full for a live recording. And Joel, unlike many pop stars, has the natural vocal abilities needed to duplicate and expand on his studio sound. We're lucky he decided to rescue these songs... from the attic.

**Alan Citron**

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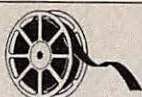
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## SOUNDTRACKS



### The Blue Max:

#### Soundtrack

Composed and Conducted: Jerry Goldsmith

Remixed: Len Engel, assisted by Tom Carlson

CD prepared by Tom Null

Varèse Sarabande VCD-47238 (ADD)

1965 (86)

Total disc time: 49:54

Len Engel was the first to recognize the significance of nine rusty cans housing the deteriorating multi-track master tapes for Jerry Goldsmith's score to *The Blue Max*. The supervisor of the music editorial department at Twentieth Century Fox, Engel is a soundtrack aficionado. He began a herculean effort to remix the tracks and restore the sound, lengthening selections that had been shortened and replacing others that had been cut out entirely.

For Engel it was a six-month labor of love. He painstakingly removed the thousands of imperfections dotting the original analog tapes. Using the most advanced processing equipment available, he avoided, as much as possible, any degradation of the original recording. The score had long been one of his favorites and he wanted others to hear it the way it was intended.

And, oh, what a miracle Engel performed. The listener is positioned right down in front for a glorious and revelatory performance of one of the finest scores written. The powerful music is in the Germanic/Russian tradition of Mahler and Shostakovich, and conductor Gold-

smith and his marvelous British musicians sound as if they recorded it yesterday instead of nearly 21 years ago.

Quite simply, this is one of the finest analog-to-digital CDs I've ever heard. A click or two have survived, and analog is still synonymous with hiss, but only in the quietest passages does it ever come close to intruding. And negligible hiss is easily forgivable once you hear the music.

Written to accompany a war film, much of this stirring music is, understandably, martial in nature, with military drum rolls and crashing climaxes. Despite the obvious classical influences, it is distinctively Jerry Goldsmith, who went on to compose scores for *The Wind And The Lion*, *Masada*, *Alien*, *Star Trek*, and many others.

Listen to "First Blood" and "The First Victory" with their shattering codas. "Retreat" is a relentless yet marvelous 7½-minute crescendo, while "A Small Favor" is a haunting but lovely dialogue between violin and tuba. The drums erupt in the thrilling 6½-minute "The Attack," challenging even the famous Telarc drums of the 1980s.

When the composer first saw the film, the producers had scored it with Richard Strauss' *Also Sprach Zarathustra* to show Goldsmith what they wanted. And the power of this work obviously influenced his composition. Later he said "Once you've heard music like that with the picture, it makes your own scoring more difficult to arrive at. It clouds your thinking. Later, as an inside joke, I included a snippet of the Strauss piece in the score—and some critic pounced on me for stealing. You can't win."

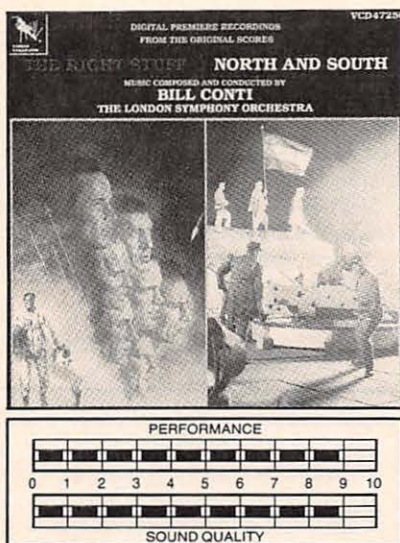
The CD listener should be prepared for a 50-minute roller coaster ride, and anyone unfamiliar with this score is going to wonder where it has been hiding all these years. Some of it is lyrical. Much of it is startling. None of it is boring.

Ron Hardcastle

### What It All Means

Yes, those odd numbers and symbols that begin each review do have a meaning. Here it is in English: Company name; disc number; (SPARS code—see p.68); year of original release; (year of CD release).





**The Right Stuff  
North And South**  
(Symphonic suites from the  
original scores)

The London Symphony Orchestra  
Conductor: Bill Conti  
Producer: Bill Conti  
Engineer: Eric Tomlinson  
Varèse Sarabande VCD 47250 (DDD)  
Total disc time: 37:22

Bill Conti, probably best known for his distinctive *Rocky* music, has been turning out film scores that are as diverse as they are delightful, with hardly a clone among them. Now, three years after the film was released, his Academy Award-winning music for *The Right Stuff* is finally available to the public. There's still no soundtrack recording on the market, but next best is this CD of symphonic suites for both *The Right Stuff* and the TV mini-series *North And South*.

Recorded digitally with the London Symphony Orchestra, this disc is better than a soundtrack: Conti has arranged a brilliant 18-minute suite of the music he wrote for the film. Here's nearly 20 minutes of music that flows beautifully from start to finish, with only a slight pause to catch one's breath before Conti launches into his exhilarating finale. Far better than a souvenir of the movie, this CD stands alone as music to be enjoyed again and again.

I was initially put off by the suite. Why? For the film, Conti cleverly wove several classical themes into his score, sometimes giving us more Tchaikovsky and Holst than Conti. It worked perfectly on screen, especially his treatment of the main theme to the Tchaikovsky violin concerto. But I sat impatiently

through almost the entire suite before I heard a tiny slice of that marvelous hybrid theme. Apparently, Conti wanted to avoid most of the classical quotations and instead create a beautiful and timeless suite that relied more on his own powers than those of others. It was a wise decision; the suite is a total delight.

The temptation is to let *The Right Stuff* eclipse the less distinctive score for *North And South*. But it would be a mistake to ignore such beautiful and noble music. It deserves the fine and

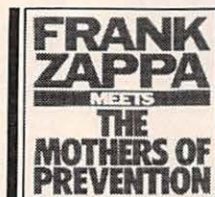
spirited performance it gets here. However odd the coupling may seem, the two scores fit together surprisingly well. (Although labelled as a "symphonic suite," the music for *North And South* is not what I would classify as such. It consists of seven separate selections.)

Most will be drawn to this disc because of *The Right Stuff* score. But with *North And South* an unexpectedly arresting bonus, the two scores make up a CD that can be enjoyed again and again.

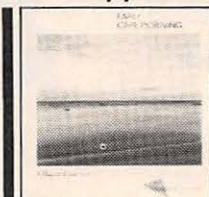
**Ron Hardcastle**

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## COUNTRY/WESTERN



### Alabama: The Touch

Producers: Harold Shedd & Alabama  
Engineers: Jim Cotton & Joe Scaife  
RCA 5649-2-R (DDD) 1986 (86)  
Total disc time: 44:50

Alabama certainly deserves its critical and commercial success. They've produced some of the most accessible and enjoyable country/pop music in recent years. *The Touch*, the group's latest release, continues to showcase their talent for blending down-home rhythms and sentimentality with state-of-the-art pop/rock. While the recording tackles no new ground for Alabama, it's a consistently pleasant listening experience.

To begin with, *The Touch* is an all-digital recording. The lively and precise sound gives each song a warm, comfortable feel. All the instruments—especially the guitars, fiddles, and keyboards—are reproduced with refreshing clarity. Yet it is Alabama's vocal harmonies that benefit the most from the digital medium. Throughout the recording, voices and instruments blend together with near-perfect synchronization.

A perfect example of this blending can be heard in the title track, "You've Got the Touch." The soft and romantic arrangement is ideal for Alabama's tight harmony. The total lack of noise also contributes to the dreamy quality of the song.

If you prefer down-home rockabilly, try "Vacation." The honky-tonk fiddle, reckless electric guitar, and nonstop backbeat on this cut make for fun listening. You can't help but sing along.

The sing-along carries over into

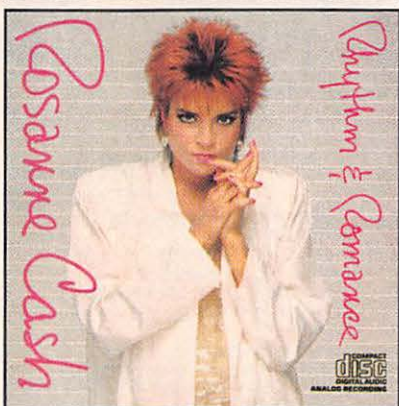
"Crusin'," a rollicking trip back to the '50s. Throughout the song the electric guitar stings with biting clarity, accentuating the '50s feel and adding depth to the track. But the solo line is much too short.

The rest of *The Touch* is simply a nice collection of ballads and mid-tempo songs which do little for the disc's appeal. The first single, "Touch Me, When We're Dancing," climbed quickly up the charts, but it's easily the weakest track in the set. Anyone

familiar with the Carpenters' original version will be disappointed with this remake. Alabama gives a weak, almost bland vocal performance. They abandon harmony here for a more straight vocal line that just doesn't fit the tender quality of the song.

Still, you can't go wrong with *The Touch*. It's highly listenable, beautifully recorded, and fun. Who could ask for anything more?

Lou Waryncia



### Rosanne Cash: Rhythm and Romance

Producers: David Malloy, Rodney Crowell, David Thoener  
Engineers: David Thoener, Joe Bogan, Mark Lanette  
CBS CK 39463 (AAD) 1985 (86)  
Total disc time: 34:33

Rosanne Cash fans will be happy with any or all of these CDs. The sound quality in each case is impressive and at times stunningly realistic. Musically, Cash has carved out her own niche, combining some of her father's country influence with an appealing pop/rock style.

Cash's most recent release is *Rhythm and Romance*, an immediately likeable effort recorded in 1985. It's her most obvious crossover attempt to date, and



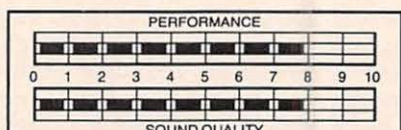
### Rosanne Cash: Somewhere in the Stars

Producer: Rodney Crowell  
Engineer: Bradley Hartman  
CBS CK 37570 (AAD) 1982 (86)  
Total disc time: 34:34



### Rosanne Cash: Seven Year Ache

Producer: Rodney Crowell  
Engineers: Bradley Hartman, Donovan Cowart  
CBS CK 36965 (AAD) 1981 (86)  
Total disc time: 32:45



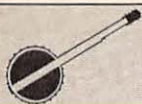
### Rosanne Cash: Right or Wrong

Producer: Rodney Crowell  
Engineers: Bradley Hartman, Donovan Cowart, Stuart Taylor  
CBS CK 36155 (AAD) 1980 (86)  
Total disc time: 38:07

it's also her most adventurous release. That much is evident on the first track, "Hold On," which is propelled by a rock-steady backbeat and Benmont Tench's Heartbreaker-style keyboards. The crossover is also obvious on the rocker "Halfway House," which features a blistering guitar solo from Waddy Wachtel.

"Pink Bedroom," meanwhile, finds Cash stepping not only into the rock'n'roll of Tom Petty, but hinting at





the new wave of Elvis Costello and the pop of, yes, the Monkees.

Not that she's abandoned country: The resplendent ballads "Second to No One" and "Closing Time" have that Nashville twang, and Cash's voice almost always has a country edge. The one track where her voice sounds more pop than country, oddly enough, is in "Old Man," an emotional tribute/apology to guess who.

Sonically, *Rhythm and Romance* is of demonstration quality, thanks to precise separation, intricate definition, and a noiseless background. The incredibly live-sounding acoustic guitars alone make this disc worth the money.

Cash's pop-oriented work on *Rhythm and Romance* shows a contentment untypical of her earlier release. The major ballads on 1982's *Somewhere in the Stars*, for example, are the dismal "Down on Love," the desperate "Looking for a Corner," and the hopeful/hopeless "Somewhere in the Stars." Each of these tracks highlights Cash's knack for crooning looking-for-love country ballads.

Cash provides some balance, however—most notably on the irresistible rockabilly track "I Look for Love," and her fun and familiar cover of "Third-Rate Romance."

The sound of *Somewhere in the Stars* isn't as awesome as on *Rhythm and Romance*, but it's not far off. The bass is at times weak for a CD, and "I Wonder" is noisy and cloudy in the drums, but most of the disc features crisp guitars and a fine distinctiveness in Cash's voice.

The sound of *Seven Year Ache* is equal to *Somewhere in the Stars*, while the music marks Cash's artistic peak. The title track on this 1981 release is Cash's best bit of composing yet. Not only did "Seven Year Ache" top country charts, but it cracked *Billboard*'s Top 40 as well, introducing Cash to a larger audience.

"Seven Year Ache" has plenty of good company, too, from the ballad "Blue Moon with Heartache" (another Cash original with an irresistible hook) to Tom Petty's country/rocker "Hometown Blues" to the Johnny Cash-ish "My Baby Thinks He's a Train."

As on all of her recordings, Rosanne got plenty of help on this disc. Contributing tight, professional performances are producer (and husband) Rodney Crowell on acoustic guitar, Booker T. Jones on organ, Hank DeVito and Albert Lee on guitars, Emory Gordy on bass, and a host of big-name backup vocalists, including Vince Gill of Poco, Rosemary Butler, Ricky Skaggs, and Emmylou Harris.

The sound of *Seven Year Ache* is above average; the background is free of noise,

the guitars and rhythm section are well-defined, and the midrange is exceptional.

*Right or Wrong*, Cash's second recording (her first album is not on CD and is out of print as an LP), sounds clear and open. The only area for improvement is the high end, which suffers from slight harshness. Otherwise, the sound is remarkably realistic. "This Has Happened Before," for example, is ideal for showing off a CD-reproduced acoustic guitar.

Musically, *Right or Wrong* is more firmly "country" than Cash's later albums.

Even so, the uptempo title track hints at the artist's later pop crossover efforts. So does the enticing "Seeing's Believing," which sounds like early Linda Ronstadt.

If you prefer Cash singing straight country, check out the rowdy stompers "Man Smart, Woman Smarter" (which features harmonies from Emmylou Harris) and "Big River" (with Ricky Skaggs on fiddle and mandolin), or the country ballad "No Memories Hangin' Around," a duet with Bobby Bare.

Larry Canale

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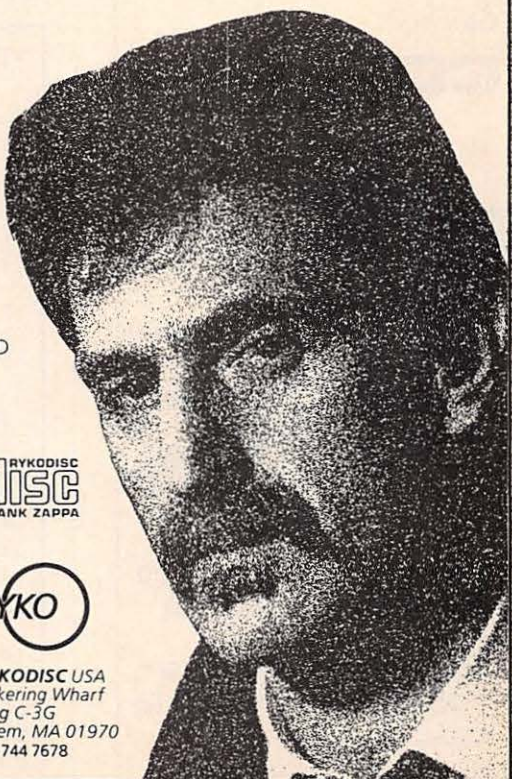
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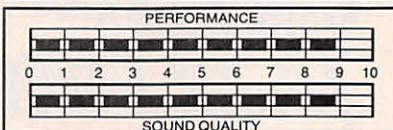
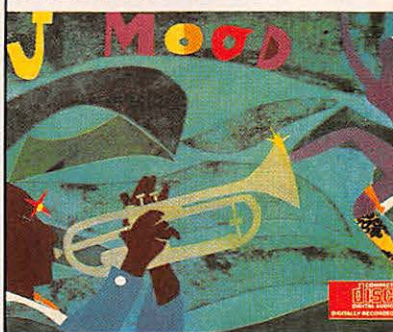
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# JAZZ

**Wynton Marsalis**



**Wynton Marsalis:**

**J Mood**

Producer: Steve Epstein

Engineer: Tim Geelan

Columbia CK 40308 (DDD) (86)

Total disc time: 42:52

With *J Mood*, Wynton Marsalis takes another step toward the jazz greatness

that's been promised for him since his debut. He sounds better than ever in a new setting (a quartet), with two new band members (Marcus Roberts on piano, Leslie Hurst III on bass).

As a soloist, Marsalis has grown with each outing. The startling technique was there from the beginning, but it never touched the soul as he struggled to find a personal voice. On last year's *Black Codes (From the Underground)*, Marsalis found that voice, and *J Mood* brings it to fruition. He is confident, relaxed, warm, and yes, even soulful.

The quartet format also leaves Marsalis with more space in which to use that voice. Now that brother Branford has taken his saxophone and started his own group, Wynton has the front line to himself and makes the most of it. Pianist Roberts—who has the unenviable task of trying to replace the talented Kenny Kirkland—also gets plenty of room to stretch out, and he uses it beautifully. Roberts proves to be a gifted accompanist with a subtle touch and a knack for rhythmic accents. Bassist Hurst is another nice addition to the band. His fluid approach underlines the relaxed feel of the disc.

The Readers' Choice

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### THIS MONTH

#### LAST MONTH

- 1 1 Bob James & David Sanborn: *Double Vision* (Warner Bros. 25393-2)
- 2 2 Flim & the BB's: *Big Notes* (Digital Music Products CD-454)
- 3 4 Andreas Vollenweider: *Down to the Moon* (CBS Masterworks MK 42255)
- 4 7 Wynton Marsalis: *J Mood* (CBS CK 40308)
- 5 3 Wynton Marsalis: *Black Codes (From the Underground)* (CBS CK 40009)
- 6 6 Dave Grusin, Lee Ritenour, Diane Schuur, Dave Valentine: *GRP Live in Session* (GRP D-9532)
- 7 — The Tonight Show Band & Doc Severinsen: *The Tonight Show Band* (Amherst AMH 93311)
- 8 10 Chick Corea: *The Chick Corea Elektric Band* (GRP D-9535)
- 9 5 *Jazz Like You've Never Heard It Before* (PolyGram 819 344-2)
- 10 — Bob James: *Obsession* (Warner Bros. 25495-2)
- 11 9 *Windham Hill Sampler '86* (Windham Hill WD 1048)
- 12 16 Diane Schurr: *Timeless* (GRP D-9540)
- 13 8 Patrick O'Hearn: *Ancient Dreams* (Private Music CDD 1201)
- 14 20 Miles Davis: *Tutu* (Warner Bros. 25490-2)
- 15 11 Jerry Goodman: *On the Future of Aviation* (Private Music CDD 1301)
- 16 15 Kitaro: *Asia* (Geffen 24087-2)
- 17 — Kenny G.: *Duotones* (Arista ARCD-8427)
- 18 14 Stanley Jordan: *Magic Touch* (Blue Note CDP 46092)
- 19 — Branford Marsalis: *Royal Garden Blues* (CBS CK 40363)
- 20 17 Flim & the BB's: *Tunnel* (Digital Music Products CD 447)





My only reservation about this group is the lone holdover, drummer Jeff Watts. His heavy-handed cymbal bashing nearly ruins the otherwise perfect title track, "Melodique," and is an annoying distraction almost throughout.

But Wynton Marsalis is the star of this date, and he lives up to the billing. Listen to the title track, and you'll hear the sounds of a mature musician with something to say. The digital recording captures the warmth and richness of Marsalis'

trumpet without coming across too brightly. Musically and sonically, this disc is a winner. If you haven't listened to Wynton Marsalis lately, check out *J Mood*. You'll be surprised how much he's grown.

Bob Leja



#### Helen Merrill & Gordon Beck:

##### No Tears, No Goodbyes

Vocals: Merrill

Piano: Beck

Producer: Jean-Jacques Pussiau

Engineers: Laurent Peyron,

Jean-Louis Rizet

Digital Editing: Christian Orsini

Owl Julia 038 (DDD)

Total disc time: 38:03

Throughout this collection of duets with pianist Gordon Beck, Helen Merrill sounds tentative and breath-

less, like she's suffering from a head cold or some respiratory ailment. What bad luck, I thought; she should never have consented to record this disc. But this is the real voice of Helen Merrill, confirmed by hearing a re-release of a 1968 album with Dick Katz. On both recordings Merrill seems constrained to singing ballads in a watery, lazy fashion—slowing down the finest backup men to her snail's pace.

The French may think it's sexy for a voice to be misty and echo-miked, but poor Ms. Merrill is totally befogged. Her voice quavers piteously and almost cracks—not with emotion, but with her patented mournful anomie.

Beck, an English veteran of considerable talent and reputation, covers for her wonted listlessness as best he

can, with a little bluster on the lively Bricusse opener, "When I Look In Your Eyes," with dapper solos on "Poor Butterfly" and "Bye Bye Blackbird," with a lengthy intro to "The Thrill Is Gone," and with two solo features (one an inappropriate funk excursion with voice-overs). In all, he diminishes Merrill's responsibilities to cooing sadly for about half of the disc.

But he does not diminish them enough, alas, as both the listener and Ms. Merrill still have to wade through hairsbreadth glissandos, slurred words, limp readings, and a profound *tristesse* that is less wistful than wasteful. Ms. Merrill's loyal fans may enjoy this sleepy, unfocused set, but I doubt that she'll lure any new ones.

Fred Bouchard

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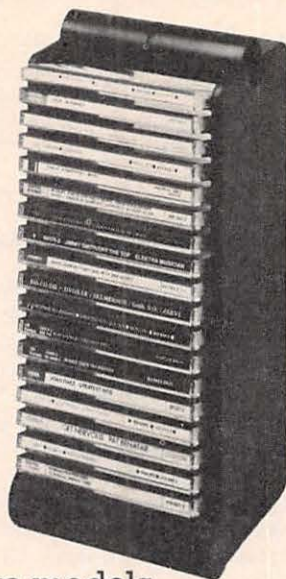
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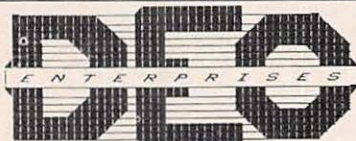


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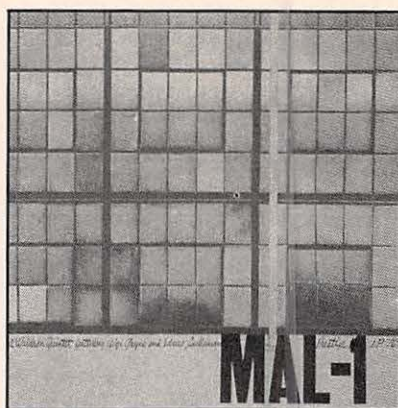
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**Kenny Drew Trio**  
Piano: Kenny Drew  
Bass: Paul Chambers  
Drums: Philly Joe Jones  
Producers: Orrin Keepnews and Bill Grauer  
Engineer: Jack Higgins  
Digital Transfer: Joe Gastwirt  
Riverside VDJ-1507 (ADD) 1956 (86)  
Total disc time: 42:36



**The George Wallington Quintet:**  
**Jazz for the Carriage Trade**  
Piano: George Wallington  
Alto Sax: Phil Woods  
Trumpet: Donald Byrd  
Bass: Teddy Kotek  
Drums: Bill Bradley  
Producer: Bob Weinstock  
Engineer: Rudy Van Gelder  
Digital Transfer: Joe Gastwirt  
Prestige VDJ-1505 (ADD) 1956 (86)  
Total disc time: 36:06



**Mal Waldron Quintet:**  
**MAL-1**  
Piano: Mal Waldron  
Trumpet: Idrees Sulieman  
Alto Sax: Gigi Gryce  
Bass: Julian Euell  
Drums: Arthur Edgehill  
Producer: Bob Weinstock  
Engineer: Rudy Van Gelder  
Digital Transfer: Joe Gastwirt  
Prestige VDJ-1513 (ADD) 1956 (86)  
Total disc time: 38:01

There's something charming and immediately disarming about a set of mono CDs recorded 30 years ago. These three classic recordings from 1956 are all stellar examples of small-combo jazz—similar in some ways but polar opposites in others.

It's a little difficult for me to put these discs into any kind of context about what preceded them. While I was indeed alive when two of them were recorded, I was not quite at the stage of understanding what my foot was, let alone what a piano or sax were.

All three of these discs are part of an on-going series of reissues from Fantasy/Prestige/Milestone, which also owns the priceless Riverside catalog. Not only jazz fans benefit from the label's vault-digging; Creedence Clearwater Revival was on Fantasy, and its catalog is also being released on CD.

The discs' cover art is identical to their LP originals, right down to the photo credits, original catalog numbers, and the "Hi-Fi" and "Non-Breakable Long Playing Microgroove" legends. Unfortunately, the vast majority of what look like highly informative lin-





er notes are in Japanese. Berlitz, anyone?

Some translation may also be in order for the catalog numbers. These discs may carry the "VDJ" numbers listed above, in the data box. There is a chance, however, that the number on the spine may be different. The Kenny Drew disc may have the number 631-224, the Wallington 629-7032 and the Waldron 637-7090. I don't know the reason for the change; I presume it has something to do with the discs' status as imports.

All three of these recordings have impeccable pedigrees. The Waldron and Wallington discs were produced by Bob Weinstock and engineered by Rudy Van Gelder at his Hackensack, New Jersey studios where so many of the Blue Note classics were later recorded. The Kenny Drew sides were produced by Orrin Keepnews and recorded by Jack Higgins at the Reeves Sound Studios in New York. All three were superbly remastered by Joe Gastwirt on a JVC system.

Gastwirt's remastering does not perform miracles; it's clear from the start that these are not modern recordings. Still, I've heard worse sound at plenty of recent live concerts. There's a dryness and immediacy to the production and engineering that Gastwirt captures. The discs may contain old music, but they are far from being relics.

The Waldron disc is essentially all up tempo and highly structured. Each theme is established by a trumpet and alto sax duet (with piano in the background), then embellished in solo turns by each, developed further by Waldron's piano, and restated in a duet. Sometimes, the trumpet and sax will trade eights and fours between the piano solo and the recap. Bass and drums are strictly in supporting roles.

The structure avoids rigidity only because of the combo's skill. Producer Weinstock draws real melodic development, not aimless noodling, out of the players. The recording is less than 40 minutes long, but is a simply stated and complete piece of work.

Drew's disc, recorded several years before he expatriated himself to Europe, is similar to Waldron's in many ways. Each track shares the structure of exposition, development and recap, but Drew's expositions are more adventurous. They have to be, since Drew is the clear focus of the music and it is up to him to maintain interest and musical development. Although there are occasional solos by the bass

and drums, the weight of the arrangements are on Drew.

Luckily, he's up to the task. Each successive chorus expands on the one before, and the blistering pace of Drew's changes and scales can be breathtaking.

The selection of songs is likely to be fairly familiar, relying on a number of standards including Duke Ellington's "Caravan," Mercer and Arlen's "Come Rain or Come Shine," "Taking a Chance on Love," and "It's Only a Paper Moon."

The mix puts Drew front and center, with secondary emphasis on Paul Chambers' bass. Philly Joe Jones' drums are furthest away from the mike, sometimes too far. The difference between Jack Higgins' and Rudy Van Gelder's recording techniques are immediately obvious. I'll take Van Gelder.

Wallington's combo makes the most boisterous music of the three discs. Wallington holds to the same basic structure advanced by the other two groups, but the brightness of Donald

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Byrd's trumpet and Phil Woods' alto sax gives the quintet an added edge that anticipates harmonic developments of the years to come.

The Wallington disc has stylistic feet in three worlds: combo, big band, and bebop. Nothing on the recording suggests the noodling excesses of bebop, and several moments remind the listener of the big Basie punch. The music is well-mannered but adventurous, pressing forward but not abandoning what has gone before.

These three discs capture the state of small-combo jazz 30 years ago, and are a credit to the groups' leaders, sidemen, and producers. They are not relics; the music remains vital, if a little formulaic. That they have survived in such audible shape is a technical triumph. That they have survived in such enjoyable shape is a musical triumph.

Daniel J. Rosenbaum



### Spyro Gyra:

#### Spyro Gyra

Producers: Jay Beckenstein, Richard Calandra

Engineer: Chuck Madden

MCA MCAD-1651 (SPARS code not available) 1978 (86)

Total disc time: 43:54



### Spyro Gyra:

#### Breakout

Producers: Jay Beckenstein, Richard Calandra

Engineer: Larry Swist  
MCA MCAD-5753 (SPARS code not available) 1986 (86)  
Total disc time: 39:18



### Spyro Gyra:

#### Freetime

Producers: Jay Beckenstein, Richard Calandra

Engineer: Not credited

MCA MCAD-1468 (SPARS code not available) 1981 (86)

Total disc time: 37:43

It was a big tease to release *Catching the Sun* on CD before the rest of the Spyro Gyra catalog, but now all nine years of the band's hard work can provide fans with a treat for the ears. That adds up to about a disc for every year of the band's existence. Through them all, Spyro Gyra holds to consistent standards, presenting solid jazz fusion in tight ensemble form.

Jay Beckenstein and Jeremy Wall have been the guiding influences of Spyro Gyra from day one. The self-entitled first disc exclusively featured their compositions, making it as representative a disc as you're bound to find in the collection. The songs retain their exuberance even now. They quite possibly outmatch later efforts for both the intensity and originality of the solo work.

The band has always maintained a careful blend of considered arrangement and casual improvisation. Beckenstein's saxophone is usually on the leading edge, punching out bold rhythmic statements on his own compositions and settling into a more fluid expression for





Wall's lyrical pieces. It's a formula that doesn't change much through the years, although other band members join the songwriting staff as time marches on.

*Freetime* is perhaps the most consistent of the Spyro Gyra discs, featuring the same integration of jazz, Latin music, and rock and roll. This combination has become the band's trademark and they serve it well. Tom Schuman's lengthy "Pacific Sunrise" incorporates all of these elements, with saxophone and electric guitar trading phrases throughout.

Spyro Gyra rarely makes any serious or aggressive musical statements, yet they also refuse to wallow in simple diddlings. The songs are patterned out quite well, demonstrating a compositional complexity which always stops short of confusion. This is a "mainstream" jazz band, and they've never been ashamed of it. Their accessibility has assured them a wide audience.

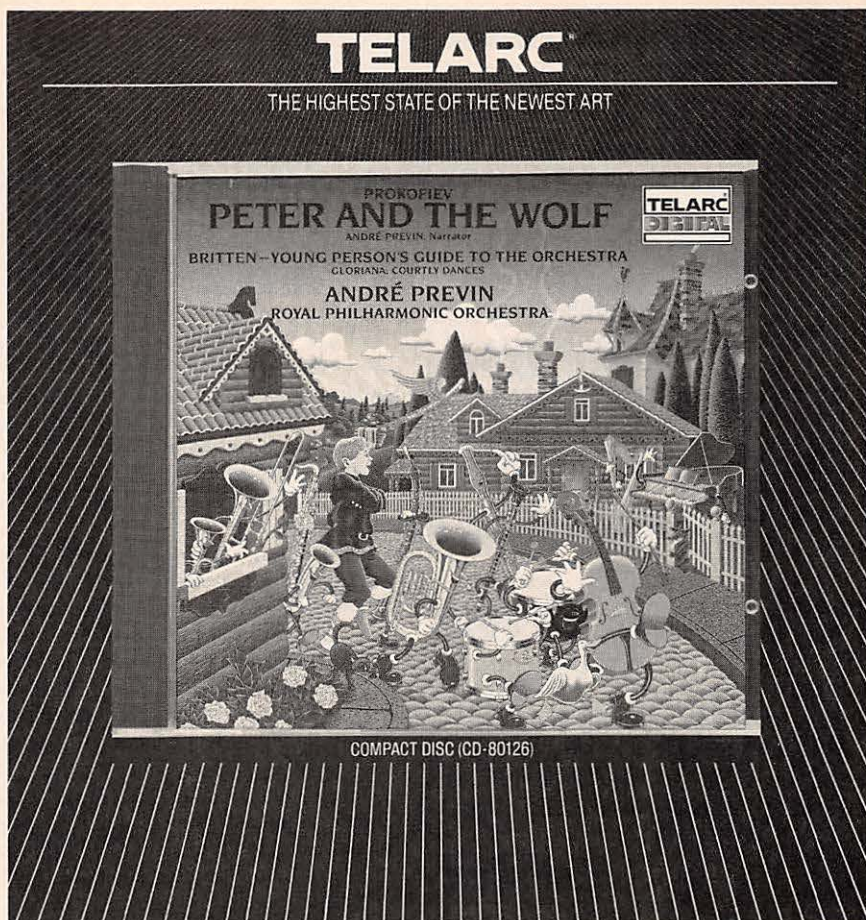
Spyro Gyra remains virtually unchanged through the years. There are guest appearances by other musicians, but the sound remains the same. In later albums, stasis set in. Their musical ideas—which at one time were new and interesting—began to sound overworked. What started as an enjoyable musical sideline was becoming a full-time job for the musicians here. And although the band remained competent, they seemed to be stuck in a rut.

The title of their latest release, *Breakout*, is therefore a symbolic one. The opening strains of "Bob Goes to the Store" inform the listener right off that Spyro Gyra is on the move. The only problem is that they're heading in the wrong direction.

The concessions to rock and roll propel *Breakout* into an even more formula-oriented arena. Electric guitar solos like the one in the title song have become rote for rock bands, and "Body Wave" could have been penned by any pop band with a place in the Top 10. If Spyro Gyra was shopping for new ideas, they should have stayed away from K-Mart.

The sound quality through the entire catalog, however, is a huge plus. There's some hiss which lessens with the years, but the sound is full of zest and punch throughout. It's a disappointment that the material on *Breakout* doesn't quite match the remarkable recording quality, but the material does have its moments.

No matter which title you choose, there's some accomplished musical talent to be found. As to whether or not you'll need to purchase the full cata-






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log... well, that's a question of your devotion to the band. Suffice it to say that at least Spyro Gyra offers a product of consistent and remarkable quality. As with good wine, the vintage depends

upon the year. But for Spyro Gyra, the past nine years have been remarkably productive and particularly flavorful. Salut.

Hugh Coyle

**ERIC DOLPHY LAST DATE**

PERFORMANCE

0	1	2	3	4	5	6	7	8	9	10

SOUND QUALITY

0	1	2	3	4	5	6	7	8	9	10

**Eric Dolphy:**  
**Last Date**  
 Alto sax, bass clarinet, flute:  
 Eric Dolphy

Piano: Misja Mengelberg  
 Bass: Jacques Schols  
 Drums: Han Bennink  
 Producer: Not credited  
 Engineer: Not credited  
 Fontana 822 226-2 (AAD) 1964 (86)  
 Total disc time: 45:45

Twenty-seven days after this recording was made, Eric Dolphy died in Berlin at age 36, apparently of undiagnosed diabetes. The session was taped in Hilversum, Holland on June 2, 1964 for a late-night Amsterdam radio program called *Jazz Magazine*. The sound is hollow, lusterless monophonic and the European rhythm section is faceless, especially the bass and drums. But Dolphy's brilliant, exuberantly inventive work on all three instruments makes it clear that he was cut down at the height of his creative powers.

Dolphy was the finest bass clarinetist



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and arguably the finest flutist ever to play jazz. His place in jazz history is that of a bridge between the post-bop period and the avant-garde era ushered in by Ornette Coleman in 1959. Much of the excitement in Dolphy's playing comes precisely from his ability to draw from familiar musical forms while flirting with the dangers of radicalism. His swooping, soaring solos are filled with speech-like sounds which communicate with emotional directness. The solos flow quickly, with elaborate ideas that propel his search for a new, deeper lyricism.

But while he provides the same liberating exhilaration as the guerrilla leaders of the "new thing," Dolphy never puts you through their auditory hardships. He pushes the boundaries all the way up to the ragged edge, but never crosses over into the screeching chaos of, say, Albert Ayler or the late Coltrane.

Highlights on *Last Date* are the two extended improvisations. Thelonious Monk's "Epistrophe" is a careening bass clarinet odyssey which explores every dark cranny of the composer's eccentric world-view.


Dolphy also plumbs the depths of the standard "You Don't Know What Love Is," this time on flute. The familiar ballad is transformed through chorus after chorus of finely threaded, delicately shaded invention which seems to flow from Dolphy as naturally as thinking and breathing.

The sound quality of this disc is not dreadful, but it's not great either. We hear the music as we would see it through a slightly clouded lens from a distance. Monophonic recordings were rare by 1964. So the question arises: Why reissue this broadcast tape in the Compact Disc format? The answer comes from Dolphy himself in his spoken words at the conclusion of the album: "When you hear music, after it's over, it's gone in the air. You can never capture it again."

*Last Date* is as close as we will ever come to "capturing" the creative mastery of a great jazz innovator at the very end of his short life. And because *Last Date* is now on Compact Disc, his genius has been captured forever.

Thomas Conrad

**BOB MINTZER BIG BAND  
CAMOUFLAGE**



**PERFORMANCE**

0	1	2	3	4	5	6	7	8	9	10

**SOUND QUALITY**

0	1	2	3	4	5	6	7	8	9	10

**Bob Mintzer Big Band:  
Camouflage**

Conductor, arranger: Bob Mintzer  
Producers: Bob Mintzer, Tom Jung  
Engineer: Tom Jung  
Digital Music Products CD-456 (DD)  
1986 (86)  
Playing time: 60:08

There's nothing quite like a big jazz band for raw musical power. I imagine

that amplified pop groups crank out more decibels, but somehow the acoustic instruments can hit harder even with lower absolute sound pressure levels. This makes big band music a peculiarly challenging music to record. The engineer must find a way to capture the power without distorting instrumental timbres or the group's overall sound.

Tom Jung pioneered an effective way of miking a big band when he produced and recorded Bob Mintzer's first DMP Compact Disc, *Incredible Journey* (DMP CD-451). He set the horns in a circle around a high-quality, bi-directional stereo ribbon microphone. The natural balance was achieved by simply positioning the players at appropriate distances from the mike. Then everything was recorded in real time, with no mixing afterwards (hence the "DD" SPARS code). The results were astonishing.

Now we have the second Mintzer/Jung collaboration. If anything, it's even better than the first. The sound is a touch smoother and rounder than the last Mintzer CD, and the instrumental balances are somewhat improved.

The music, like that on Mintzer's last DMP release, is a big band jazz that reflects the spirit of our times (the last piece on the disc bears the title "In the Eighties"). Mintzer makes excellent use





of a range of harmonic, rhythmic, and melodic techniques, and even resources that weren't available to musicians of the '40s.

Mintzer has once again come up with a well-balanced and satisfying set of compositions to fill a CD, but some of them are quite similar to ones that appeared on his earlier disc. The opening "Techno Pop," for example, sounds a lot like "Computer," which appeared on *Incredible Journey*. The second track, "Mr. Fone Bone," has a lot to do with the earlier disc's "Latin Dance."

For me, the disc really starts with track four, "After Thought," a short rumination which finds Mintzer switching between electric bass clarinet and tenor sax over a kaleidoscopic background of horns and drums. He moves from one instrument to another so easily that, if the program notes didn't say otherwise, I'd believe the switches were achieved by some deft tape splicing.

"After Thought" serves as a curtain-raiser for "Camouflage," Mintzer's update of "Sweet Georgia Brown." This swings in a manner appropriate to its roots, with fine solos by Mintzer, trombonist Chris Seiter, and Randy Brecker on trumpet. "One Man Band" floats an old-time, churchy melody over a trendy fusion beat to set up an ear-tickling solo by Mintzer on his clarinet.

Ultimately the strengths and weaknesses of *Camouflage* are precisely those of Mintzer's earlier disc, with strengths clearly in the majority. If *Incredible Journey* left you with an appetite for more from Mintzer and cohorts, here it is. Enjoy!

Thomas Krehbiel



## TELARC

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Mahler's Symphony No. 1 "Titan" is now available on compact disc in response to consumer demand. It's the perfect complement to Mahler's Symphony No. 2 "Resurrection". Leonard Slatkin brilliantly conducts the Saint Louis Symphony Orchestra for this Telarc digital recording.



### Jeff Berlin:

#### Pump It!

Producers: Jeffrey Weber, Jeff Berlin  
 Engineers: Rik Pekkonen, Gerry Brown, Gary Wagner  
 Passport Jazz PJCD 88017 (SPARS code not available) 1986 (86)  
 Total disc time: 39:02

If you're looking for less than 40 minutes of marginal fusion/rock with one or two better-than-average tracks, this may be the disc for you. Otherwise, you'll be disappointed.

Jeff Berlin seems to be testing the waters with this solo effort. From the disc's start you'll realize that this jazz bassist is up to something. First of all, he's singing (his voice sounds alright, but it doesn't fit this album). Luckily, only two of the six tracks have vocals. Secondly, the title song is rock'n'roll—almost an attempt at Top 40. I had to check the label again...sure enough, Passport Jazz.

This is not to cast aspersions on jazz/rock crossovers. That's fine, but only when the artist knows what he's doing. "Pump It!" doesn't work as a rock, jazz, or fusion piece. The lyrics are lame, the melody is klunky. The whole song seems like an excuse for the chorus.

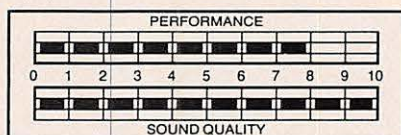
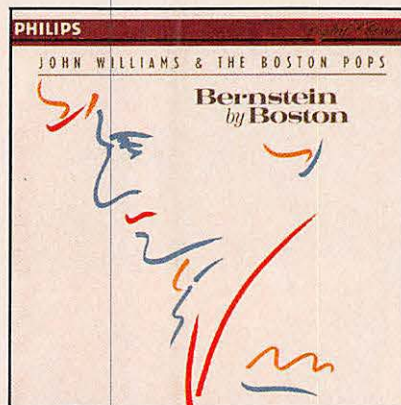
To be fair to Berlin, a few of these songs work well. "Freight Train Shuffle," the best cut on the disc, shows Berlin's potential as a writer and his talent as a bassist. It's got a great hook, a good beat, and plenty of room for Berlin's solo work. "Manos De Piedra" also stands out, despite its game-show intro and ending. The bass solo in this piece deserves special mention—it must have left the frets steaming.

But other than those two songs, not much. "Crossroads" is a remake of the classic by Robert Johnson, last done by Ry Cooder for a movie soundtrack. Berlin's arrangement is nothing new. "Bach" sounds more like Switched-on Bach than anything else. "All The Greats" is Berlin's tribute to Neil Peart, Alex Lifeson, and Geddy Lee, but it reminds me of a television theme song (it's the thought that counts). Finally, "Joe Frazier (Round 2)" has some nice licks but still comes up short.

The sound quality is good, however, with only minimal hiss and a surprisingly realistic soundstage. But all in all, this is a disappointing disc. Jeff Berlin has an obvious talent and a potential for good fusion writing. *Pump It!* is a strange, eclectic CD that gives only brief glimpses of the possibilities.

A. Taylor





**Bernstein by Boston**  
**Leonard Bernstein:**  
*West Side Story* (selections)  
 "Simple Song" from *Mass*  
*On the Town* (selections)  
 "Overture" *Candide*

## Divertimento for Orchestra Wonderful Town (selections)

The Boston Pops  
 Conductor: John Williams  
 Producer: John McClure  
 Engineer: Not listed  
 Philips 416 360-2 (DDD) 1985 (86)  
 Total disc time: 48:28

Whether or not he's writing for the theater, Leonard Bernstein writes for the theater. And whether or not they're playing theater music, the Boston Pops play theater music. This isn't criticism, it just helps explain why the music making by this composer and orchestra is so infectious and why it appeals to millions of listeners.

Fortunately for Bernstein, his isn't ordinary theater music; he has a talent for blending elements of pop, jazz, and classical styles into a kind of music that keeps your interest after many hearings.

Unfortunately, with the exception of *West Side Story*, not much of this American composer's music is available on CD. Here, we are treated to the first

CD appearance of selections from the musical *Wonderful Town* and to a *Divertimento* that couldn't be more confidently or convincingly played, or truer to the composer's intentions.

From both an artistic and a marketing viewpoint, putting John Williams and the Boston Pops together with Bernstein was a brilliant move. Bernstein's distinctly American blend of melodies and rhythms fares very well in the hands of one of America's most intelligent and accomplished conductor/composer/entertainers and his orchestra.

*Divertimento for Orchestra*, written for the 100th anniversary of the Boston Symphony Orchestra, consists of eight sections, each a reminiscence about the composer's early days in Boston. The Pops musicians, many of whom also play in the Boston Symphony, have a special affinity for this music's playful, sensuous, strongly rhythmic character.

The almost obligatory *West Side Story* selections are the weakest material on the CD, reminding us that with unremarkable arrangements the Pops can play like the dance band or theater or-

## The Readers' Choice

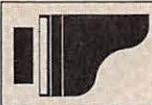
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## THIS MONTH

### LAST MONTH

- 1 1 Vladimir Horowitz: *The Last Romantic* (Deutsche Grammophon 419 205-2 GH)
- 2 6 Holst: *The Planets*/Royal Philharmonic Orchestra, Andre Previn (Telarc CD-80133)
- 3 7 Vladimir Horowitz: *The Studio Recordings* (Deutsche Grammophon 419 217-2 GH)
- 4 9 *South Pacific*/Kiri te Kanawa, Jose Carreras, Sarah Vaughan, Mandy Patinkin (CBS Masterworks MK 42205)
- 5 5 J.S. Bach: *Bachbusters*/Don Dorsey (Telarc CD-80123)
- 6 2 Telarc Sampler No. 3 (Telarc CD-80003)
- 7 8 Tchaikovsky: *The Nutcracker* (Soundtrack)/London Symphony Orchestra, Charles Mackerras (Telarc CD-80137-2)
- 8 10 Brandford Marsalis: *Romances for Saxophone*/English Chamber Orchestra, Andrew Litton (CBS Masterworks MK 52122)
- 9 12 Vladimir Horowitz: *Horowitz in Moscow* (Deutsche Grammophon 419 499-2 GH)
- 10 3 Gershwin: *Rhapsody in Blue*/Los Angeles Philharmonic, Michael Tilson Thomas (CBS Masterworks MK 39699)
- 11 — *Syncopated Clock*/Rochester Pops, Erich Kunzel (Pro Arte CDD-264)
- 12 4 Philip Glass: *Songs From Liquid Days* (CBS Masterworks MK 39564)
- 13 11 *Orchestral Spectaculars*/Cincinnati Pops Orchestra, Erich Kunzel (Telarc CD-80115)
- 14 14 John Bayless: *Bach Meets the Beatles* (Pro Arte CDD 211)
- 15 15 Vivaldi: *The Four Seasons*/Boston Symphony Orchestra, Seiji Ozawa, Joseph Silverstein, violin (Telarc CD-80070)
- 16 13 Rachmaninov: *Symphony No. 2*/Royal Philharmonic Orchestra, Andre Previn (Telarc CD-80113)
- 17 17 Copland: *Appalachian Spring*; *Fanfare for the Common Man*; *Rodeo*/Atlanta Symphony Orchestra, Louis Lane (Telarc CD-80078)
- 18 18 *Ein Straussfest*: Waltzes, Polkas, and Marches of the Strauss Family/Cincinnati Pops Orchestra, Erich Kunzel (Telarc CD-80098)
- 19 19 *Time Warp*/Cincinnati Pops Orchestra, Erich Kunzel (Telarc CD-80106)
- 20 20 John Williams & the Boston Pops: *Out of This World* (Philips 411 185-2 PH)





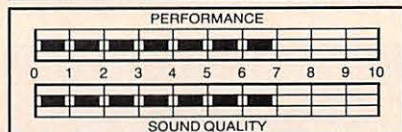
chestra that's been doing the same show for six months. Even the percussionist on "Maria" can't seem to get with Williams' tempo.

The rest of the material is terrific, and the performances reflect an innate understanding of the idiosyncracies and nuances that are the essence of Bernstein's music.

Not much could be done to improve the sound quality of this disc, recorded in Boston's acoustically fabulous Symphony Hall. Unlike many orchestral recordings where solo instruments emerge unnaturally close to the listener, this recording allows each instrumental solo to come from its natural place in the orchestra. The orchestra itself is perfectly miked to assure plenty of Symphony Hall ambience without losing a good balance among instrumental sections.

Bravo Bernstein! Bravo Boston!

David Vernier



**Leonard Bernstein in Budapest**  
**Bartok:**  
 Music for Strings, Percussion, and Celesta

**Bernstein:**  
 Divertimento for Orchestra  
 Brahms:

**Hungarian Dance No. 6**  
 Bavarian Radio Symphony Orchestra  
 Conductor: Leonard Bernstein  
 Hungaroton HCD 12631-2 (DDD)  
 1983 (86)  
 Total disc time: 49:58

Leonard Bernstein first visited Budapest in 1948—a relatively unknown 30-year-old conductor, whose performance with the City Orchestra of

Budapest impressed the musicians and astounded the local critics. The program he performed there is similar to the one on this CD, a live recording made on the occasion of Bernstein's return to Budapest after a 35-year absence.

This time, Bernstein conducts the Bavarian Radio Symphony Orchestra and includes a work that didn't exist in 1948: his own *Divertimento for Orchestra*. Overall, the orchestra responds well to Bernstein's highly personal conducting style, but the strings fail to execute

the more energetic passages of both the Bartok and the Bernstein works with the required precision and vitality.

There's a genuine laziness in the bowing articulation, which is surprising in view of the fact that the performance is live, both composers give precise markings in their scores, and that one of the composers just happens to be conducting.

Miking must have presented some problems for the Hungaroton engineers, whose judgment usually is absolutely

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right. Here, an unnatural emphasis is placed on some of the percussion instruments (in the "Samba" section of *Divertimento*, for instance) and we hear slightly too much from the instruments closest to the audience. This imbalance creates the impression that the middle of the orchestra is missing.

For Brahms' *Hungarian Dance No. 6* (as orchestrated by Albert Parlow), the orchestra is infinitely more comfortable—or should I say *able* to convey the spirit and vitality of the music.

In spite of these criticisms, I did enjoy listening to the disc. Live recordings show a purity and honesty that only can come from a real performance. The results aren't always as satisfying, and the performances often aren't as good, but unlike studio recordings, you get a sense of the moment itself. Along with the audience, you feel the anticipation and participate with them in a new musical experience.

**Nigel Reid**



**Rachmaninov:**  
**Concerto No. 2 for Piano and  
Orchestra in C Minor, Op. 18**  
**Rhapsody on a Theme of Paganini,  
Op. 43**

Piano: Cecile Licad  
Chicago Symphony Orchestra  
Conductor: Claudio Abbado  
Producer: Bernard James  
Engineers: Jack Renner, Jules  
Bloomenthal  
CBS MK 38672 (DDD) 1984 (86)  
Total disc time: 57:17

If you've never shed a tear over Rachmaninov's achingly beautiful melodic

structures, or if you're new to classical music and you're not familiar with the composer's *C Minor Piano Concerto*, get your hands on this recording. You won't let go of it.

Cecile Licad fills her performance with youthful energy, but never loses control of her superb keyboard skills. She restrains herself in the foreboding solo opening, then wanders off, almost independently, under the rich string textures of the orchestral entrance. Having set the mood and fixed our attention, Licad administers dose after dose of Rachmaninov's yearning melodies, and stops just short of excess.

This remarkable young pianist commands the orchestra, at times almost dictatorially, and then recedes into private conversation at just the right moment, leaving the orchestra to carry on alone. We feel her security, her unity with this score as she leads us without hesitation through Rachmaninov's towering thematic castles. Even if you know this score by heart, you'll want this disc. The music is the same, but Licad unfolds it, takes out the creases, and presents it fresh and new.

Claudio Abbado and the Chicago Symphony, unfailingly in tune and in time, possess that enormous reserve of power needed to make Rachmaninov's great climaxes seem as effortless as the calmest sections of the Adagio.

For me, any coupling fades beside the *C Minor Concerto*, but Licad's *Rhapsody on a Theme of Paganini* is electric and thoroughly satisfying.

**Tom Vernier**

### The SPARS Code: What Does It Mean?

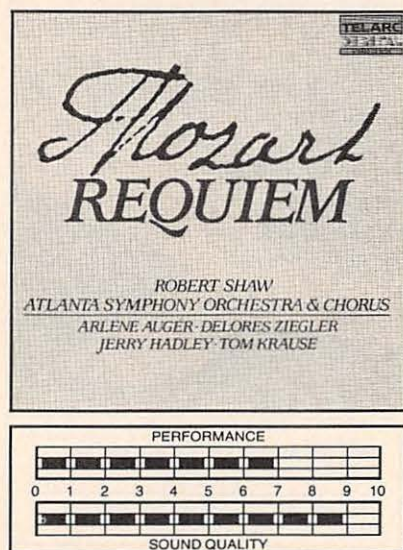
Each *Digital Audio Compact Disc* review includes a three-letter code (AAD, DDD, etc.) following the disc's label and number.

The code represents a standard proposed by the Society of Professional Audio Recording Studios (SPARS), which many record labels already have adopted.

The first letter identifies the nature (analog or digital) of the recorder originally used in the recording process. The second and third letters pertain to recorders that the music was mixed to and mastered to, respectively.

For example, a disc with an "ADD" code would indicate an original analog recording, mixed and mastered to digital recorders.





#### W.A. Mozart:

##### Requiem, K. 626

Soprano: Arlene Auger

Mezzo-soprano: Delores Ziegler

Tenor: Jerry Hadley

Bass: Tom Krause

Atlanta Symphony Orchestra and Chorus

Conductor: Robert Shaw

Producer: Robert Woods

Engineer: Jack Renner

Telarc CD-80128 (DDD) 1986 (86)

Total disc time: 51:46

Robert Shaw's choruses always sound big, lush, rich, full (pick one), but fortunately, the conductor's proclivity toward bigness never turns grotesque or ponderous. For this brand new recording of Mozart's unfinished masterpiece, conductor Robert Shaw elected to use Franz Beyer's edition of the score (leaner than the traditional Süssmayr version), turning his big chorus and orchestra into a highly maneuverable vehicle for a sensitive and reverent reading.

In choosing Beyer's edition, Shaw also takes a stand on the continuing argument over how the *Requiem* should properly be performed. Süssmayr's version, completed shortly after Mozart's death, was long thought to be the authoritative source, based on Mozart's own dictated instructions.

Responding to serious questions about the authenticity of many of Süssmayr's additions and "corrections," musicologist Beyer, in the early 1970s, attempted to expunge the score of Süssmayr's obvious errors and restore to the instrumentation as much of Mozart as possible.

In the most radical—but probably

most sensible—editorial approach, Richard Maunder, who prepared the *Requiem* edition used by Christopher Hogwood (London 411 712-2), determined that this work should be recognized for what it is—an incomplete composition—and performed as such. So in Maunder's version, the movements composed essentially by Süssmayr are left out, and new solutions are offered for completion of the sections for which Mozart left only sketches.

Beyer's edition suits Shaw and his forces well, allowing them to present a "complete" but musicologically respectable version of Mozart's work without having to join the "authentic performance" types like Maunder and Hogwood.

Shaw takes an unhurried approach, milking each melodic passage for all the Romanticism it's worth. The result is a warm, respectful, at times wonderfully lyric *Requiem*, one most listeners will be able to live with for a long time.

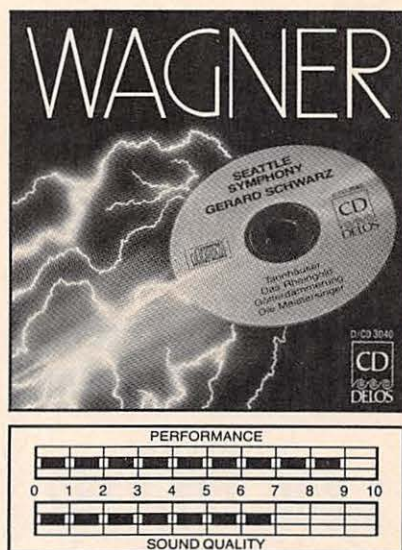
The soloists, all experienced Mozart interpreters, make a fine ensemble, especially effective together in the "Recordare." Overall, the recorded sound is as spacious as Shaw's interpretation.

My quibble is with Shaw's usual tendency to allow the chorus to blend in too much with the orchestra, creating one large homogenized performing force, the distinctive sounds and roles of the two groups often indistinguishable from one another. The chorus on this recording should be more prominent, with more clearly defined melodic lines, better articulation, endings of words exactly together, with more imaginative treatment of long phrases.

Shaw hasn't achieved prominence as a conductor by presiding over undistinguished performances and recordings. But to record Mozart's *Requiem*, a work with formidable competition in the CD catalog, listeners should be able to sense, if not distinctly hear, something in the interpretation that illuminates, or transcends, or re-defines what has gone before.

Instead, what we have here is a very good performance, patiently, reverently paced, with respectful attention to Mozart's original intentions, accompanied by faithfully reproduced sound. If you don't have a recording of Mozart's *Requiem*, you won't do badly with this one. But if you're a traditionalist all the way, try the Karl Böhm recording on DG (413 553-2); and if you want a truly distinctive and rewarding experience, go for the Hogwood version on London.

David Vernier



#### Wagner: Orchestral Selections from Tannhäuser, Das Rheingold, Götterdämmerung, and Die Meistersinger von Nürnberg

Seattle Symphony Orchestra

Conductor: Gerard Schwartz

Producer: Joanna Nickrenz

Engineer: John Eargle

Recorded at the Seattle Opera House, March 1986

Delos D/CD 3040 (DDD) 1986 (86)

Total Disc Time: 68:52

An American orchestra under an American conductor in an American hall—a rare combination for a major recording, even today. Delos Records has chosen just this combination to launch a series of discs showcasing Gerard Schwartz and the Seattle Symphony Orchestra.

Okay, so the music on this one is German. Or way beyond German, to positively, well—Wagnerian. But America has a love affair with Wagner's music that dates back to the mania for Wagnerian societies late in the last century, and that extends to the inextinguishable popularity even today of suites and extracts such as this one.

So while few purchasers of this disc would be likely to sit through the whole of one of the Ring cycles for which the Seattle Opera is justly renowned, compilations of orchestral Wagner such as Schwartz has chosen here are among the staples of recorded classical music.

And justly so. Wagner's orchestral music is rich in invention, color and detail. One of the great innovators of his (or any other) century, his music lends itself perfectly to the kind of sonic spec-





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tacular that this disc offers. This collection is an audio roller coaster that, for sheer impact, will not disappoint.

It's all here, from rolling tympani and soaring strings to great tutti climaxes and somber woodwind chorales. Wagner is a veritable textbook of orchestration, and this Seattle performance clearly spells out every page. There's even a guaranteed tweeter-fryer in the great anvil stroke representing Donner's hammer near the opening of the "Gods' entry to Valhalla" selection from *Das Rheingold*. This high frequency blast is a sort of treble version of the infamous Telarc bass drum; fortunately, on my first hearing I remembered it about eight bars in advance and had time to turn down the volume, saving my tweeters from an unscheduled trip across the room. This disc has dynamic range with a capital "D," much of it subtler and more musical than a hammer and anvil, happily.

The Schwartz and Seattle performance here is quite faultless, with a seamlessness of line and unity of attack and dynamics that is rarely heard. Playing Wagner successfully requires a unique combination of patience and intensity; patience in waiting while the musical architecture works itself out, but intensity in maintaining the high level of harmonic and structural tension required for such long periods.

Schwartz and the Seattle do so eminently well, and make some beautiful sounds in the process. The brass choir's sound in particular is gorgeous, while the woodwind tone is generous and nicely balanced.

And in general the recording succeeds in conveying the grandeur and lushness of the music, but there's a disturbing sort of chestiness, almost a honky quality to the middle that occasionally spoils the *schlagsahne* string tone. The hall sound could also be a bit better represented, as it sounds curiously dead on this recording—although never having enjoyed the Opera House in Seattle it's impossible to be definitive.

Overall, a successful disc, one that can serve as a grand demonstration of a sound system's ability—or of the Seattle Symphony's, for that matter. And for those lingering Wagnerians who haven't four entire free days to spare, this taste of the Master could be just the ticket.

D. Kumin



### Leroy Anderson: Syncopated Clock

Rochester Pops

Conductor: Erich Kunzel

Producer: Steven Vining

Engineer: Ros Richie

Pro Arte CDD 264 (DDD) 1985 (86)

Total disc time: 50:53

If you are 35 years old or older and a resident of the greater New York area, then you probably have an idea of how valuable Leroy Anderson was to fledgling television stations three decades ago.

Whenever a local station, or even the networks, needed music for a theme or as incidental accompaniment for a variety act or a segment of a program, it seemed that the Leroy Anderson songbook was the first place they'd look. That's why, for many of those listening to this collection, the titles may seem obscure while the melodies themselves are old friends.

Perhaps the most famous number is one that's *extremely* familiar to two generations of New Yorkers. Even if they didn't know the name of the tune, they could identify it as the theme of CBS' *The Early Show*, *The Late Show* and *The Late Late Show*: "Syncopated Clock." For me and for millions of others in my region, the tune is a summons to the sofa to watch old movies.

Other Anderson themes regularly made it onto the tube as show themes or as incidental music. "Plink-Plank-Plunk," the ideal Fifties' women's show theme; "Blue Tango," "A Trumpeter's Lullabye," "The Typewriter Song," "Sleighride," and "Bugler's Holiday"



were all given a try, and (as in the case of "Sleighride," now a Christmas standard) frequently resurface to this date. All these selections have the virtues typical of Leroy Anderson's work. They are based on uncomplicated, happy melodies that possess a charm and wit that make them memorable. In short, they are perfect encore pieces for a pops orchestra.

Arthur Fiedler, the great conductor of the Boston Pops, was one of the first to recognize these qualities in Anderson's work. As Fiedler's protégé, Anderson wrote many of the pieces included on this disc as encores for the Boston Pops concerts of the Forties and Fifties. These selections have been pleasing audiences ever since.

The very best of the Anderson encores are here, given an affectionate and expert treatment by the Rochester Pops, under the baton of the king of digital pops, Erich Kunzel. His lightness of touch ensures that the humor and good feeling at the heart of every selection shines through.

All 18 of the numbers on this disc are absolute charmers. Of these, the stand-

outs are "Syncopated Clock," "Blue Tango" (which actually made it onto the Hit Parade in the early '50s), the delightful "Sleighride," "Sandpaper Ballet," "The Typewriter Song," and "Plunk-Plunk-Plunk." In sum, this disc represents a delightfully nostalgic trip into the recent past.

Helping to intensify the pleasure is uniformly excellent digital sound repro-

duction. Having grown up listening to these works through a TV speaker, it comes as something of a surprise to hear how well they sound on a modern recording. In this instance the sound is full, brilliant, and pleasing. You couldn't ask for a better way to introduce the simple pleasures of Leroy Anderson to a new generation of listeners.

Brian J. Murphy



**Richard Strauss:**  
**Also Sprach Zarathustra, Op. 30**  
**Macbeth, Op. 23**  
 Detroit Symphony Orchestra  
 Conductor: Antal Dorati  
 Producer: Paul Myers  
 Recording Engineer: Colin Moorfoot  
 London 410 146-2 (DDD)  
 Total disc time: 53:36

This disc starts off right—at first you hear only a single organ pedal tone and

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the vague noises of the organ's mechanisms. Then the trumpets enter, launching the tremendous symphonic fanfare that forms the introductory section to Richard Strauss' *Also Sprach Zarathustra*. Crescendo after crescendo rises over rolling timpani until a final orchestral fortissimo suddenly dissolves into the organ in full voice. A big, natural-sounding bottom end and the surprisingly good acoustics of United Artists Auditorium in Detroit lend this recording breath-taking, wall-bending realism.

The high brass sparkles convincingly, but overall clarity in the middle and upper frequencies could have been improved. I expect to hear the triangle as well as the timpani in the climax at the end of the introduction.

Antal Dorati wields his baton like a huge brush, painting Strauss' varied textures across a vast, symphonic canvas. He asks the orchestra for a unified vision of this great tone poem, rather than the disjointed, episodic treatment we often hear. The Detroit Symphony responds with unusual virtuosity and a sense of live excitement. This is one of their great performances.

The tone poem *Macbeth* strives for somewhat more literal imagery than *Zarathustra*, and Dorati presents it as an engaging, musical narrative. No attempt is made to actually tell the story of *Macbeth*, of course, but the flavor of the drama and its characters is here. I especially like the suitably tragic and concise conclusion.

**Tom Vernier**



**Gershwin: Piano Concerto in F  
(Ferde Groffé Arrangement)  
Three Preludes**

## The Man I Love Somebody Loves Me Fascinatin' Rhythm

Piano: Russell Sherman

Conductor: Gunther Schuller

Orchestra of St. Luke's

Recorded by Thomas Lazarus

Pro Arte CDD 244 (DDD) 1985 (86)

Total Disc Time: 44:12

If you like the music of George Gershwin, you're going to love this disc. If you don't like Gershwin... but then, *everybody* likes Gershwin. This Pro Arte offering is part of the "American Artists Series," which showcases leading players, conductors, and composers of the American music scene.

Like its well-loved predecessor *Rhapsody in Blue*, Gershwin's 1925 *Piano Concerto* melded the popular music of the 1920s with the mainstream classical music of the day. There is surely nothing in so-called serious music as quintessentially American as Gershwin's blend of Jazz, Romantacism and Impressionism—which in this work yields a rather more serious and structured result than in the earlier piece.

*Rhapsody in Blue* was commissioned by Paul Whiteman for his band—one of the first of the great commercial jazz bands—and was heard by the great conductor, Walter Damrosch. Damrosch was sufficiently impressed to order a similar work on a larger scale for the New York Symphony Society. The resulting *Concerto in F* was composed by Gershwin after much study of classical form, and was originally orchestrated by the composer himself for a full symphonic ensemble.

Unfortunately, the work is here recorded in a smaller arrangement that was made—again for the Whiteman band—by Ferde Groffé, the same man who accomplished the orchestration for *Rhapsody* a year earlier. This is the arrangement generally known today.

Gershwin's larger works are nothing if not derivative, drawing on such disparate sources as Ravel, Bartok, Stravinsky, and—most importantly—Gershwin himself.

The concerto's principal theme is a near cousin to Gershwin's tune "Somebody to Watch Over Me," while echoes from *Rhapsody in Blue* are much in evidence. The piano part often mirrors Ravel's pianistic technique; Bartok's and Stravinsky's rhythmic impulses are discernable as well.

Nevertheless, this music could have been written by no one but George





Gershwin, and this lesser-known of the American composer's ensemble works is energetic and satisfying. The concerto is in three movements—following (after its own fashion) conventional late-19th century form—with the Rondo-like last movement drawing much of its material from the themes of the earlier sections.

The performances of long-time colleagues (at the New England Conservatory of Music) Russell Sherman and Gunther Schuller are nearly flawless. Sherman's playing is relaxed yet muscular, never too serious nor too jazzy. Well-kept secret Sherman is a leading proponent of modern American music, and while his gargantuan technique is hardly taxed by this work, his big, round tone and percussive attack are well-suited to the piece.

Sonically, the disc is near-perfect. Recorded at New York City's Masonic

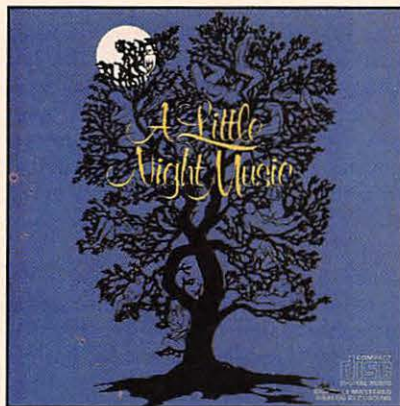
Hall, it strikes a nice balance between intimacy and grandeur with just the right amount of hall sound. The piano has a touch of close-miked "ping" to it, but the overall balance is almost ideal.

The solo piano music that fills out the recording is a rare treat—three all-but-unknown preludes and three songs transcribed by the composer from his own performances. These little gems—the songs, in particular—display Gershwin at his most relaxed and least self-conscious, and are thus musically among his most successful writings. Although I am generally opposed to mixing orchestral and solo music on a disc, these six miniatures alone make this one a worthwhile purchase for Gershwin fans. And that's all of us, right?

D. Kumin



## ORIGINAL CAST



**Original Broadway Cast Recording:**  
**A Little Night Music**  
 Music, lyrics: Stephen Sondheim  
 Book: Hugh Wheeler  
 Producer: Goddard Lieberson  
 Engineer: Not credited  
 CBS CK-32265 (AAD) 1973 (86)  
 Total disc time: 60:11

A relatively loose adaptation of the Ingmar Bergman film *Smiles of a Summer Night*, Stephen Sondheim's *A Little Night Music* tackles the considerable subject of the foolishness of love and



**Original London Cast Recording:**  
**A Little Night Music**  
 Music, lyrics: Stephen Sondheim  
 Book: Hugh Wheeler  
 Producer: Thomas Z. Shepard  
 Engineer: Mike Ross  
 RCA RCD1-5090 (AAD) 1975 (86)  
 Total disc time: 59:08

youth, and the accompanying regrets. This is certainly Sondheim's most frivolous, light-hearted show since *A Funny Thing Happened on the Way to the Forum*. So there's little surprise that it is

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also one of his most popular.

The contents of these original-cast recordings of the Broadway and London productions are nearly identical, with playing times that differ by only 63 seconds. The same songs, orchestrations, lead-in dialogue and track configuration appear on both. And, while the sonic textures of the discs are different, neither is, on the whole, technically superior.

This is not to say that the discs are equal or interchangeable. For everyone except die-hard aficionados who might want both, the New York recording should be chosen over the London cast recording of two years later. The distinction is almost entirely one of performance and, most likely, American taste.

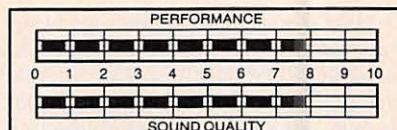
Overall, the American actors have stronger singing voices and more character in those voices. Singers on a cast album must be able to project the personalities of their characters entirely in vocal terms, and by and large the Broadway cast does that more effectively than its London counterpart.

Case in point: Desirée Armfeldt is an aging actress whose lover is the virile dragoon Carl-Magnus, played in New York by Laurence Guittard. Guittard's macho swagger can be heard in every manly note he sings. By contrast, Englishman David Kernan sings well but sounds almost delicate—decidedly proper and quite *English*. In the context of the story, and to American ears, Guittard presents a better-drawn character.

The rest of the Broadway cast features an unusually strong group of supporting players: the belting D. Jamin-Bartlett as Fredrik's lusty maid; Victoria Mallory as Fredrik's still-virginal bride of eleven months; and Hermione Gingold (a star in both casts) as Desirée's disapproving mother.

The London recording, produced by Thomas Z. Shepard, has a mellower, more natural sound than the Broadway album, but its voices seem to get lost in the orchestra. The Broadway recording, which Shepard associate produced at CBS under Goddard Lieberson, sounds slightly more artificial, but after several minutes I was used to its texture and grateful for the greater punch and presence of its singers. The sound quality of this disc more closely replicates the atmosphere of a theater, which is as it should be, since its performances recapture the theatrical experience of *A Little Night Music* so well.

Sanford Block



### Original Broadway Cast Recording: A Collector's Sondheim

Music, lyrics: Stephen Sondheim  
Producer: Thomas Z. Shepard, et al.  
Engineers: Various  
RCA RCD3-5480 (AAD, DDD) (86)  
Total disc time: 3:34.54 (3-disc set)

This anthology comprises RCA producer Thomas Z. Shepard's favorites from the Sondheim oeuvre, from *A Funny Thing Happened on the Way to the Forum* (1954) through *Sunday in the Park with George* (1984). Shepard lovingly produced recordings of most of these scores. So, while a dozen Sondheim followers might have come up with a dozen different collections, Shepard's authority and expertise cannot be disputed.

The selections are organized in nearly chronological order (based on composition, not individual performances). The 90-page insert booklet features insightful commentary by Jeffrey Lonoff and Shepard himself (as well as all lyrics and 14 pages of more-than-postage-stamp-size photographs), putting the songs into the perspective of the shows that contained them, and the shows into the perspective of the composer's career.

The sound quality of the tracks varies; most of the selections are from analog source material. *Anyone Can Whistle*, from 1964, naturally shows its age the most. *A Stephen Sondheim Evening*, recorded live under less-than-ideal circumstances, has no paucity of background noise. However, the recordings of *Side by Side* and *Marry Me a Little* are astoundingly clear and bright. The selections from *A Little Night Music* (both London and Broadway casts), *Pacific Overtures*, and *Sweeney Todd* also fare well. Throughout, it's apparent that Shepard has achieved the best possible quality from these recordings.

You may never wish to listen to the whole three-and-a-half hours at one sitting, but as a reference to these shows, and to the creative periods, evolution, and singular voice of today's pre-eminent theater composer, this is the definitive collection.

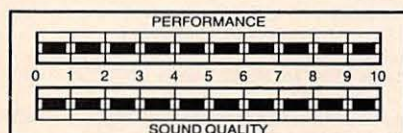
Sanford Block

**More Reviews on page 103**



Way back in September 1984, The Los Angeles Chamber Orchestra recording of Dvorak's "Serenade, Notturmo and Waldesruhe" was the first CD to be awarded *Digital Audio's* highest rating—a perfect 10/10. Since then, sound and performance assessments have been given in these pages to more than 1200 discs. The 211 listed below, followed by their issue dates, earned admirable totals of either the coveted 20 points or an almost-perfect 19. Each one is something special...

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Prince & the Revolution: Parade; WBR 25395-2 (AAD)	11/86
Barbra Streisand: The Broadway Album; CBS CK 40092 (AAD)	2/86

### JAZZ

Do'a: Ancient Beauty; PLO CD 9004 (DDD)	7/86
The Bob Florence Limited Edition: Magic Time; TRE TRCD-536 (DDD)	10/86
Kitaro: Silk Road; GRM 18-7009-2 (AAD)	5/86
Wynton Marsalis: Black Codes (From the Underground); CBS CK 40009 (DDD)	6/86
Wynton Marsalis: Hot House Flowers; CBS CK 39530 (DDD)	6/86
Bob Mintzer Big Band: Incredible Journey; DMP CD-451 (DDD)	4/86
Thelonious Monk: The Unique; RIV JCD 654-209 (AAD)	8/86
Patrick O'Hearn: Ancient Dreams; PRI CDD 1301 (DDD)	3/86
Alan Stivell: Harpes du Nouvel Age; RND CD3094 (DDD)	7/86
Joe Williams & Friends: I Just Want to Sing; DEL D/CD 4004 (DDD)	3/86
Gerald Wilson Orchestra of the 80's: Calafia; TRE TRCD-537 (DDD)	10/86

### BROADWAY

La Cage Aux Folles: Original Broadway Cast; RCA RCD1-4824 (DDD)	10/84
On Your Toes: Original Broadway Cast; PGM 813 667-2 (DDD)	2/85
Sunday in the Park With George: Original Broadway Cast; RCA RCD1-5042 (DDD)	4/85

### COUNTRY/WESTERN

Emmylou Harris: The Ballad of Sally Rose; WBR 25205-2 (DDD)	7/85
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### CLASSICAL

John Adams: Harmonielehre/San Francisco Symphony Orchestra, Edo de Waart; NON 79115-2 (DDD)	5/86
J.S. Bach: The Art of the Fugue BWV 1080/Liszt Ferenc Chamber Orchestra, Janos Rolla; HUN HCD 12810-11 (DDD)	7/86

J.S. Bach: Cello Sonatas Nos. 1-3 BWV 1027-1029/Mischa Maisky; DGG 415 471-2 GH (DDD)	7/86
J.S. Bach: Harpsichord Works/Leipzig Bach Edition, Harpsichord: Armin Thalheim; CPR CDC 10034 (DDD)	11/85
J.S. Bach: Motets BWV 225-230/Rostock Motet Choir, Hartwig Eschenburg; CPR CDC 10030 (DDD)	8/85
J.S. Bach: Music in the Bach Household/Capella Fidiolina Leipzig, Hans Gruss; CPR CDC 10031 (DDD)	11/85
J.S. Bach: Organ Works; Prelude and Fugue BWV 545, 552; Canonic Variations BWV 769; Chorale BWV 751, 711, 739, 680, 437; Fantasy and Fugue in c Minor BWV 537/Felix Friedrich; CPR CDC 10036 (DDD)	8/85
J.S. Bach: Six Partitas BWV 825-830/Andras Schiff; LON 411 732-2 LH (DDD)	4/86
J.S. Bach: Six Suites for Solo Cello/Mischa Maisky; DGG 415 416-2 (DDD)	6/86
J.S. Bach: Trio Sonatas BWV 525, 526, 527, 528/Holm Vogel; CPR CDC 10037 (DDD)	8/85
J.S. Bach: Trio Sonatas BWV 529, 530; Two Trios BWV 583, 584; Canonic Variations on Vom Himmel hoch BWV 769/Holm Vogel; CPR CDC 10040 (DDD)	8/85
Bax: Symphony No. 4; Tintagel/Ulster Orchestra, Bryden Thomson; CHA CHAN-8312 (DDD)	8/85
John Bayless: Bach Meets the Beatles/PRO CDD 211 (DDD)	9/85
Beethoven: Symphony No. 5 in c Minor Op. 67; Egmont Overture/Boston Symphony Orchestra, Seiji Ozawa; TLC CD-80060 (DDD)	5/86
Berlioz: Symphonie Fantastique/Cleveland Orchestra, Lorin Maazel; TLC CD-80076 (DDD)	11/84
Berlioz: Symphonie Fantastique/Montreal Symphony Orchestra, Charles Dutoit; LON 414 203-2 LH (DDD)	1/86
Brahms: A German Requiem/Atlanta Symphony Orchestra & Chorus, Robert Shaw; TLC CD-80092 (DDD)	7/85
Brahms: Piano Concerto No. 2/Vienna Philharmonic, Bernard Haitink; LON 410 199-2 LH (DDD)	12/84
Johannes Brahms: Symphony No. 1 in c Minor, Op. 68/Los Angeles Philharmonic Orchestra, Carlo Maria Giulini; DGG (DDD)	1/87
Britten: War Requiem/City of Birmingham Symphony Orchestra & Chorus, Simon Rattle; AGL CDCB-47033 (DDD)	3/85
Canadian Brass: High, Bright, Light, and Clear: The Glory of Baroque Brass/RRS RCD1-4574 (DDD)	6/86
M.A. Charpentier: Motets for One and Two Voices/Concerto Vocale; HMC 90.1149 (DDD)	11/85
Debussy: Images for Orchestra; Prelude to the Afternoon of a Faun/London Symphony Orchestra, Andre Previn; AGL CDC 47001 (DDD)	1/86
Debussy: La Mer; Three Nocturnes/London Symphony Orchestra, Andre Previn; AGL CDC 47208-2 (DDD)	1/86
Dvorak: Serenade Op. 22; Notturmo Op. 40; Silent Woods for Cello & Orchestra Op. 68/Los Angeles Chamber Orchestra, Gerard Schwarz; DEL D/CD 3011 (DDD)	9/84
Dvorak: Symphony No. 9 in e Minor Op. 95 (From the New World)/Chicago Symphony Orchestra, Georg Solti; LON 410 116-2 LH (DDD)	5/86
Dvorak: Symphony No. 9 in e Minor Op. 95 (From the New World)/Chicago Symphony Orchestra, James Levine; RCA RCD1-4552 (DDD)	5/86
Falla: Three Corners Hat; El Amor Brujo/Montreal Symphony Orchestra, Charles Dutoit; LON 410 008-2 LH (DDD)	1/86
Gershwin: Rhapsody in Blue; Second Rhapsody; Preludes; Unpublished Piano Works/Los Angeles Philharmonic, Michael Tilson Thomas; CBS MK 39699 (DDD)	1/86
Handel: Concerti Grossi Nos. 1-4 Op. 6/English Concert, Trevor Pinnock; DGG 410 897-2 AH (DDD)	6/85
Handel: Solomon/Monteverdi Choir, English Baroque Soloists, John Eliot Gardiner; PHI 412 612-2 PH (DDD)	5/86
Handel: Water Music; Suite in F Major; Suite in D/English Concert, Trevor Pinnock; DGG 410 525-2 AH (DDD)	6/85
Haydn: Piano Sonatas in C Major (Hob. XVI/48), c Minor (Hob. XVI/20), & C Major (Hob. XVI/50)/Andras Schiff; DEN C37-7801 (DDD)	9/86

### RECORD COMPANY CODES

The following three-letter codes indicate the record labels included in Cream of the Crop.

A&M	A&M Records
AGL	Angel/EMI Records
AMG	American Gramophone
ARA	Arabesque Recordings
ATL	Atlantic/Atco Records
BIS	Bis Records
BNR	Blue Note Records
BOM	Book-of-the-Month
CBS	CBS Records
CHA	Chandos Records
CPR	Capriccio Records
DEL	Delos Records
DEN	Denon Records

DGG	Deutsche Grammophon
DMP	Digital Music Products
E/A	Elektra/Asylum Records
ECM	ECM Records
EGR	EG Records
ERA	Erato Records
GEF	Geffen Records
GRM	Gramavision Records
HMC	Harmonic Records
HUN	Hungaroton Records
LON	London Records
MCA	MCA Records
MHS	Musical Heritage Society
MFS	Mobile Fidelity Sound Lab
MOS	Moss Music Group
NON	Nonesuch Records

OAR	Open Air Records
ORF	Orfeo Records
PGM	PolyGram Records
PHI	Philips Classics
PLO	Philo Records
PRI	Private Music
PRO	Pro Arte Records
PRP	Proprius Audio Sources
RCA	RCA Records
RHI	Rhino Records
RIV	Riverside Records
RRS	RCA Red Seal Records
SEC	Second Hearing
SHF	Sheffield Lab
SIR	Sire Records
TLC	Telarc Records
TLD	Teldec Records
TRE	Trend Records
WBR	Warner Bros. Records

The letters in parentheses represent the SPARS code. For a full explanation, see page 68.



**Liszt: Piano Sonata in b Minor; Two Legends; The Blessing of God in Solitude/Francois-Rene Duchable; ERA ECD 88091 (DDD)** 7/86

**Mahler: Symphony No. 7 (Song of the Night)/Chicago Symphony Orchestra, James Levine; RCA RCD2-4581 (DDD)** 11/84

**Mendelssohn: Motets & Psalms/La Chapelle Royale Collegium Vocale, Philippe Herreweghe; HAR HMC 901142 (DDD)** 8/86

**Meyerbeer: The Loves of Teolinda/Berlin Radio Symphony Orchestra, Gerd Albrecht, RIAS Chamber Chorus; ORF C 054-831 A (DDD)** 3/85

**W.A. Mozart: Fantasia in c Minor, K. 475; Sonata in c Minor, K. 457; Sonata in C Major, K. 279; Sonata in D Major, K. 576/Misuko Uchida; PHI 412 122-2 (DDD)** 1/87

**W.A. Mozart: The Magic Flute/ Staatskapelle Dresden, Colin Davis, Leipzig Radio Chorus; PHI 411 459-2 PH3 (DDD)** 3/85

**W.A. Mozart: Opera Arias/London Symphony Orchestra, Colin Davis; PHI 411 148-2 PH (DDD)** 12/84

**W.A. Mozart: Sonata in C Major, K. 545; Sonata in F Major, K. 533/494; Rondo in a Minor, K. 511/Mitsudo Uchida; PHI 412 122-2 (DDD)** 1/87

**Off: Carmina Burana/Philharmonia Orchestra & Chorus, Southend Boys' Choir, Riccardo Muti; ANG CDC 47100-2 (DDD)** 3/86

**Giovanni Paisiello: The Barber of Seville/Hungarian State Orchestra, Adam Fischer; HUN HCD 12525/26 (DDD)** 6/86

**Prokofiev: String Quartet No. 1 in b Minor Op. 50; String Quartet No. 2 in F Major Op. 92/Sequoia String Quartet; NON 79048-2 (DDD)** 11/85

**Rachmaninov: Symphony No. 2 in e Minor Op. 27/Royal Philharmonic Orchestra, Andre Previn; TLC CD-80113 (DDD)** 4/86

**Ravel: Daphnis & Chloe/Montreal Symphony Orchestra & Chorus, Charles Dutoit; LON 400 055-2 LH (DDD)** 1/86

**Respighi: Pines of Rome; Fountains of Rome; Roman Festivals/Montreal Symphony Orchestra, Conductor: Charles Dutoit; LON 410 145-2 LH (DDD)** 11/84

**Respighi: Pines of Rome; Roman Festivals; Fountains of Rome/Montreal Symphony Orchestra, Charles Dutoit; LON 410 145-2 (DDD)** 1/86

**Johan Helmich Roman: Sinfonias and Violin Concertos/Orpheus Chamber Ensemble, Nils-Erik Sparf; BIS CD-284 (DDD)** 5/86

**Saint-Saens: Symphony No. 3 (Organ)/ Philadelphia Orchestra, Eugene Ormandy; TLC CD-80051 (DDD)** 10/84

**Shostakovich: Symphony No. 5/ Concertgebouw Orchestra, Bernard Haitink; LON 410 017-2 LH (DDD)** 10/84

**Sibelius: Symphony No. 3 in C Major; Suite from King Kristian II; BIS CD-228 (DDD)** 11/85

**Sibelius: Symphony No. 4 Op. 63; Luonnotar Op. 70; Finlandia Op. 26/ Philharmonia Orchestra, Vladimir Ashkenazy; LON 400 056-2 LH (DDD)** 5/86

**Stravinsky: The Rite of Spring/Detroit Symphony Orchestra, Antal Dorati; LON 400 084-2 LH (DDD)** 11/84

**Sergei Taneyev: Piano Quintet Op. 30; ARA Z6539 (DDD)** 5/86

**Suppe: Seven Overtures (Light Calvary, Poet and Peasant, Pique Dame, and more/Montreal Symphony Orchestra, Charles Dutoit; LON 414 408-2 (DDD)** 2/87

**Verdi: Macbeth/German Opera Orchestra & Chorus, Berlin, Giuseppe Sinopoli; PHI 412 133-2 PH3 (DDD)** 5/85

**Verdi: Il Trovatore (The Troubadour)/ National Academy of St. Cecilia Orchestra & Chorus, Carlo Maria Giulini; DGG 413 355-2 GH3 (DDD)** 5/85

**Vivaldi: Viola d'amore Concertos/Liszt Ferenc Chamber Orchestra, Janos Rolla; HUN HCD 12162-2 (ADD)** 1/87

**Waldteufel: Music of Waldteufel/ Cincinnati Pops Orchestra, Erich Kunzel; MOS MCD 10025** 6/86

## CLASSICAL COLLECTIONS

**J.S. Bach: Magnificat/Handel: Utrecht Te Deum/Concentus musicus, Nikolaus Harnoncourt; TLD 8.42955 ZK (DDD)** 6/85

**Schola Hungarica: Ludus Danielis (Play of Daniel)/Schola Hungarica, Janka Szendrei; HUN HCD 12457-2 (DDD)** 4/86

**Star Tracks/Cincinnati Pops Orchestra, Erich Kunzel; TLC CD-80094 (DDD)** 7/85

**Stars and Stripes/Cleveland Symphonic Winds, Frederick Fennell; TLC CD-80099 (DDD)** 11/84

**Telemann: Double Concerto in F for Recorder; Baroque Bassoon, & Strings/Vivaldi: Concerto in F Baroque Bassoon & Strings; Double Concerto in g Minor for Recorder, Baroque Bassoon, & Strings/Drottingholm Baroque Ensemble; BIS CD-271 (DDD)** 1/86

**Time Warp/Cincinnati Pops Orchestra, Erich Kunzel; TLC CD-80106 (DDD)** 7/85

**William Tell & other Favorite Overtures/ Cincinnati Pops Orchestra, Erich Kunzel; TLC CD 80116 (DDD)** 9/86

**John Williams & The Boston Pops: Out of this World; PHI 411 185-2 PH (DDD)** 10/84



## POP/ROCK

**Laurie Anderson: Big Science; WBR 3674-2 (AAD)** 5/85

**Bruce Cockburn: Stealing Fire; A&M CD 80012 (AAD)** 9/85

**Fleetwood Mac: Fleetwood Mac; WBR 2281-2 (AAD)** 2/86

**Billy Joel: Greatest Hits Volume I and Volume II; CBS CK 40121 (AAD)** 11/85

**Quincy Jones: The Dude; A&M CD 3721 (AAD)** 1/85

**Johnny Mathis: Heavenly; MFS MFCD 825 (AAD)** 1/86

**Joni Mitchell: Court and Spark; E/A 61001-2 (AAD)** 4/86

**Joni Mitchell: Dog Eat Dog; GEF 24074-2 (ADD)** 5/86

**Roxy Music: Avalon; WBR 23686-2 (AAD)** 11/85

**Frank Sinatra: A Man and His Music; WBR 1016-2 (ADD)** 1/87

**Frank Sinatra: The Concert Sinatra; WBR 1009-2 (ADD)** 1/87

**Frank Sinatra: My Way; WBR 1029-2 (ADD)** 1/87

**Frank Sinatra: Ol' Blue Eyes Is Back; WBR 2155-2 (ADD)** 1/87

**Frank Sinatra: September of My Years; WBR 1014-2 (ADD)** 1/87

**Bruce Springsteen: Born in the U.S.A.; CBS CK 38653 (AAD)** 1/85

**Bruce Springsteen & The E-Street Band: Live 1975-85 CBS C3K40558 (ADD and DDD)** 2/87

**Steely Dan: A Decade of Hits (The Best of); MCA D-5570 (AAD)** 11/85

**Talking Heads: Little Creatures; SIR 2305-2 (ADD)** 1/85

## JAZZ

**John Coltrane: A Love Supreme; MCA MCAD 5660 (SPARS N/A)** 2/87

**Bill Evans Trio: Explorations; RIV JCD 653-9351 (AAD)** 7/86

**Bill Evans Trio: Sunday at the Village Vanguard; RIV JCD 645-9376 (AAD)** 7/86

**Ella Fitzgerald: The Rodgers & Hart Songbook Volumes 1 & 2; PGM 821 579-2/821 580-2 (AAD)** 2/86

**Stan Getz & Laurindo Almeida: Stan Getz with Guest Artist Laurindo Almeida; PGM 823 149-2 (AAD)** 1/86

**Dizzy Gillespie: New Faces; GRP D 9512 (DDD)** 1/86

**Harry James and His Orchestra: The Silver Collection; PGM 823 229-2 (AAD)** 6/85

**Stanley Jordan: Magic Touch; BNR CDP 46092 (DDD)** 12/85

**Jay Leonhart: Salamander Pie; DMP CD-442 (DDD)** 5/85

**Mannheim Steamroller: Fresh Aire I; AMG AGCD 355 (AAD)** 4/85

**Mannheim Steamroller: Fresh Aire II; AMG AGCD 359 (AAD)** 4/85

**Thelonious Monk: Brilliant Corners; RIV VDJ-1526 (AAD)** 7/86

**George Shearing Trio & Stephane Grappelli: The Reunion; PGM 821 868-2 (AAD)** 4/86

**Archie Shepp: Down Home New York; PGM SN 1102 CD (AAD)** 9/86

## BROADWAY

**Company: Original Broadway Cast; CBS CK 3550 (AAD)** 7/86

**Nine: Original Broadway Cast; CBS CK 38325 (AAD)** 3/85

## CLASSICAL

**J.S. Bach: Six Suites for Solo Cello BWV 1007-1012/Mari Fujiwara; DEN C37-7373/7475 (DDD)** 6/86

**J.S. Bach: Two-Part Inventions BWV 772a-786; Three-Part Inventions BWV 787-801/Andras Schiff; LON 411 974-2 (DDD)** 10/86

**J.S. Bach: Violin Concerto in a Minor BWV 1041; Violin Concerto in E Major BWV 1042; Concerto for Two Violins and Orchestra in d Minor BWV 1043/ Academy of Ancient Music, Christopher Hogwood; LON 400 080-2 LH (DDD)** 6/86

**Beethoven: Piano Concerto No. 1 in C Major Op. 15; Rondo No. 1 in C Major Op. 51; Rondo No. 2 in G Major Op. 51/Czech Philharmonic, Vaclav Neumann; PRO CDD-175 (DDD)** 5/86

**Beethoven: Piano Concerto No. 2 in B-flat Major Op. 19; Fantasy for Piano Op. 77; Rage Over a Lost Penny Op. 129/Czech Philharmonic, Vaclav Neumann; PRO CDD-176 (DDD)** 6/86

**Beethoven: Symphonies Nos. 1 & 2/ Academy of Ancient Music, Christopher Hogwood; LON 414 338-2 LH (DDD)** 5/86

**Beethoven: Violin Sonata Nos. 5 & 9 (Spring & Kreutzer)/Itzhak Perlman; LON 410 554-2 LH (ADD)** 3/86

**Debussy: La Mer; Three Nocturnes/ Boston Symphony Orchestra, Colin Davis; PHI 411 433-2 PH (DDD)** 5/86

**Dvorak: Piano Concerto in g Minor/Saint Louis Symphony Orchestra, Walter Susskind; MFS MFCD 814** 10/86

**Choreae & Carmina: Renaissance Dances and Songs/Melinda Lugosi, The Completed Camerata Hungarica; HUN HCD 12662-2 (ADD)** 2/87

**Elgar: Violin Concerto/London Philharmonic Orchestra, Vernon Handley; AGL CDC 47210 (DDD)** 1/86

**Handel: Messiah/Atlanta Symphony Orchestra & Chamber Chorus, Robert Shaw; TLC CD-80093-2 (DDD)** 12/85



<b>Handel: Messiah (Highlights)/Academy of Ancient Music, Christopher Hogwood; LON 400 086-2 OH (AAD)</b>	6/85	<b>Stolzel: Concerto in D Major for Trumpet &amp; Strings/Telemann: Concerto in c Minor for Trumpet, Strings, &amp; Continuo; Concerto in D for Trumpet, Two Oboes, Strings, &amp; Continuo/Vivaldi: Concerto No. 1 in C Major for Two Trumpets, Strings, &amp; Continuo Op. 46 RV 537; Concerto in B-flat for Trumpet, Violin, Strings, &amp; Continuo RV 548/Academy of St. Martin-in-the-Fields, Neville Marriner; AGL CDC 47012 (DDD)</b>	4/86	<b>J.S. Bach: Six Schubler Chorales; Fantasia in G/Daniel Chorzempa; PHI 412 117-2 PH (DDD)</b>	6/85
<b>Handel: Water Music; Horn Suite in F Major; Music for the Royal Fireworks/Academy of Ancient Music, Christopher Hogwood; LON 400 059-2 OH (AAD)</b>	6/85	<b>Stravinsky: The Soldier's Tale/Shostakovich: Piano Concerto No. 1/Prokofiev: Symphony No. 1 (Classical)/Los Angeles Chamber Orchestra, Gerard Schwarz; DEL D/CD 3021 (DDD)</b>	10/84	<b>J.S. Bach: Sonatas for Flute BWV 1030, 1032, 1034, 1035; Partita in a Minor BWV 1013; Aurele Nicolet, Christiane Jaccottet, Mari Fujiwara; DEN C37-7331 (DDD)</b>	11/85
<b>Liszt: Piano Works Volume 6; Venezia e Napoli; Les jeux d'eau à la Villa d'Este; Bénédiction de Dieu dans la solitude; Ballade No. 2/Jorge Bolet; LON 411 803-2 LH (DDD)</b>	4/86			<b>J.S. Bach: Violin Concertos/La Petite Bande; Sigiswald Kuijken; PRO CDD 124 (DDD)</b>	5/85
<b>W.A. Mozart: The Marriage of Figaro/London Philharmonic Orchestra, Georg Solti; LON 410 150-2 LH3 (DDD)</b>	3/85			<b>Brahms: Symphony No. 3/North German Radio Symphony Orchestra, Gunter Wand; PRO CDD-008 (DDD)</b>	4/86
<b>Ernesto Nazareth: Brazilian Tangos &amp; Waltzes/Arthur Moreira Lima; PRO CDD 144 (DDD)</b>	3/85			<b>Debussy: Three Nocturnes; Jeux/Concertgebouw Orchestra, Women's Voices of the Collegium Musicum, Bernard Haitink; PHI 400 023-2 PH (ADD)</b>	11/85
<b>Rachmaninov: The Isle of the Dead, Op. 29; Symphonic Dances, Op. 45/Concertgebouw Orchestra, Vladimir Ashkenazy; LON 410 124-2 (DDD)</b>	8/86			<b>Handel: Coronation Anthems/English Concert, Trevor Pinnock/Westminster Abbey Choir; DGG 410 030-2 AH (DDD)</b>	6/85
<b>Arvo Part: Tabula Rasa/Staatsorchester Stuttgart, The 12 Cellists of the Berlin Philharmonic Orchestra, Lithuanian Chamber Orchestra; ECM 25011-2 (AAD)</b>	8/86			<b>Handel: Six Organ Concertos Op. 4; Organ Concerto in A Major/English Concert, Trevor Pinnock; DGG 413 465-2 AH2 (DDD)</b>	6/85
<b>Schubert: String Quartet No. 14 in d Minor (Death and the Maiden)/Orlando Quartet; PHI 412 127-2 (DDD)</b>	2/87			<b>Handel: Six Organ Concertos Op. 7; Organ Concerto in F Major; Organ Concerto in d Minor/English Concert, Trevor Pinnock; DGG 413 468-2 AH2 (DDD)</b>	6/85
<b>Shostakovich: Symphony No. 8 in c Minor Op. 65/Concertgebouw Orchestra, Bernard Haitink; LON 411 616-2 LH (DDD)</b>	5/85			<b>Liszt: Liszt Recital/Joseph Villa; SEC GS 9001 (DDD)</b>	7/85
<b>Sibelius: Symphony No. 4; Canzonetta; The Oceanides/Gothenburg Symphony Orchestra, Neeme Jarvi; BIS CD-263 (DDD)</b>	5/86			<b>Mahler: Symphony No. 2 in c Minor (Resurrection)/St. Louis Symphony Orchestra &amp; Chorus, Leonard Slatkin; TLC CD 80081/82 (DDD)</b>	9/84
<b>Tchaikovsky: Symphony No. 6/Philadelphia Orchestra, Eugene Ormandy; DEL D/CD 3016 (DDD)</b>	11/84			<b>W.A. Mozart: Don Giovanni/London Philharmonic Orchestra, Bernard Haitink, Glyndebourne Chorus; AGL 47036 (DDD)</b>	5/86
<b>Telemann: Concertos in e Minor, d Minor, c Minor, f Minor, and D Major, for Oboe, Strings, and Basso Continuo/Academy of St. Martin-in-the-Fields, Iona Brown; PHI 412 879-2 (DDD)</b>	10/86			<b>W.A. Mozart: More of the Best of Wolfgang Amadeus Mozart/Academy of St. Martin-in-the-Fields &amp; Chorus, Orchestra of the Royal Opera House, Covent Garden, BBC Symphony Orchestra, Colin Davis, Neville Marriner; PHI 416 273-2 (ADD)</b>	7/86
<b>Verdi: Falstaff/Vienna Philharmonic Orchestra, Herbert von Karajan, Vienna State Opera Chorus; PHI 412 263-2 PH2 (DDD)</b>	4/85			<b>Michael Murray: The Ruffatti Organ in Davies Symphony Hall: A Recital of Works by Bach, Messiaen, Dupré, Widor, &amp; Franck; TLC CD-80091 (DDD)</b>	12/85
<b>Vivaldi: The Four Seasons/Taverner Players, Andrew Parrott; DEN C37-7283 (DDD)</b>	10/85			<b>Mussorgsky/Ravel: Pictures at an Exhibition Mussorgsky/Rimsky-Korsakov: Night on Bald Mountain/Cleveland Orchestra, Lorin Maazel; TLC CD-80042 (DDD)</b>	7/86
<b>Wagner: The Ring: Das Rheingold/Vienna Philharmonic Orchestra, Georg Solti; LON 414 101-2 LH3 (AAD)</b>	2/86			<b>Anthony Newman: Newman Plays Newman/SEC GS 9005 (DDD)</b>	7/85
<b>Wagner: Siegfried/Vienna Philharmonic Orchestra, Georg Solti; LON 414 110-2 LH4 (AAD)</b>	2/86			<b>Michael Praetorius: Terpsichore (Excerpts)/New York Renaissance Band, Sally Logemann; ARA Z6531 (DDD)</b>	7/86
				<b>Respighi: Pines of Rome; The Birds; Fountains of Rome/Atlanta Symphony Orchestra, Louis Lane; TLC CD-80085 (DDD)</b>	12/86
				<b>Rossini: Maometto Secondo/Philharmonia Orchestra, Ambrosian Opera Chorus, Claudio Scimone; PHI 412 149-2 PH3 (DDD)</b>	6/86
				<b>Schubert: Impromptu Op. 90 D 899; Impromptu Op. 142 D 935/Radu Lupu; LON 411 711-2 LH (DDD)</b>	11/84
				<b>Tchaikovsky: 1812; Berlin Philharmonic Orchestra, Seiji Ozawa; CAP CDC 7 47375 2 (DDD)</b>	1/87
				<b>Vivaldi: The Four Seasons/Israel Philharmonic Orchestra, Itzhak Perlman; AGL CDC 47319 (DDD)</b>	3/86
				<b>Vivaldi: Twelve Concertos Op. 8 (Including The Four Seasons)/Liszt Ferenc Chamber Orchestra, Budapest, Janos Rolla; HUN HCD 12465-66 (DDD)</b>	3/86



### POP/ROCK

<b>Laurie Anderson: Mister Heartbreak; WBR 25077-2 (AAD)</b>	5/85
<b>Donald Fagan: The Nightfly; WBR 23696-2 (DDD)</b>	11/86
<b>John Fogerty: Centerfield; WBR 25203-2 (AAD)</b>	6/85
<b>Peter Gabriel: Security; GEF 2011-2 (DDD)</b>	4/85
<b>Van Morrison: A Sense of Wonder; PGM 822 895-2 (AAD)</b>	1/86
<b>Paul Simon: Greatest Hits Etc.; CBS CK 35032 (ADD)</b>	1/86
<b>'Til Tuesday: Welcome Home; CBS EK 40314 (SPARS N/A)</b>	2/87
<b>Yes: 90125; ATL 90125-2 (AAD)</b>	4/86

### JAZZ

<b>Kenny Burrell: Guitar Forms; PGM 825 576-2 (AAD)</b>	7/86
<b>Flim &amp; the BB's: Big Notes; DMP CD-454 (DDD)</b>	4/86
<b>Frederic Hand: Jazzantigua; MH SMHS 11049K (AAD)</b>	5/86
<b>Jazz at the Pawnshop; PRP CDP 7778/9 (AAD)</b>	8/85
<b>Sonny Rollins: On Impulse; MCA MCAD 5655 (SPARS N/A)</b>	2/87
<b>Ryuichi Sakamoto, Eddie Jobson, Eric Watson, Joachim Kuhn: Piano One; PRI CDD 1401 (DDD)</b>	3/86
<b>Michel Sardaby and Monty Alexander: Caribbean Duet; HMC H/CD 8504 (DDD)</b>	8/86
<b>Mel Torme: Mel Torme Swings Schubert Alley; PGM 821 581-2 (AAD)</b>	9/85

### BROADWAY

<b>Sondheim: Sondheim; BOM 11-7517 (DDD)</b>	11/85
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### COUNTRY/WESTERN

<b>Alabama: Roll On; RCA PCD1-5339 (AAD)</b>	7/85
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### CLASSICAL

<b>J.S. Bach: Brandenburg Concertos Nos. 1-6 I Musici, Pina Carmirelli; PHI 412 790-2 (DDD)</b>	8/86
<b>J.S. Bach: Musical Offering/The Leipzig Bach Edition, New Bach Collegium Musicum Leipzig; CPR CDC 10032 (DDD)</b>	8/85
<b>J.S. Bach: Musical Offering; The Art of the Fugue; Canons/The Bach Compact Disc Edition, Musica Antiqua Koln; DGG 413 642-2 AH3 (ADD/DDD)</b>	8/85
<b>J.S. Bach: Organ Concertos After Vivaldi; Concerto in a Minor BWV 593; Concerto in C BWV 594; Fugue in b Minor BWV 579/Daniel Chorzempa; PHI 412 116-2 PH (DDD)</b>	7/85

### CLASSICAL COLLECTIONS

<b>J.S. Bach: Brandenburg Concerto No. 2</b>	4/86
<b>Haydn: Trumpet Concerto in E-flat/Telemann: Concerto in D for Trumpet, Strings, &amp; Continuo/Torelli: Concerto in D for Trumpet, Strings, &amp; Continuo/Philharmonia Orchestra, Riccardo Muti; AGL CDC 47311 (DDD)</b>	
<b>Handel/Babell/Baston: Recorder Concertos/Gordon Jacob: Suite for the Recorder/Academy of St. Martin-in-the-Fields, Kenneth Sillito; PHI 411 056-2 PH (DDD)</b>	2/85
<b>Prokofiev: Peter and the Wolf Op. 67/Britten: Young Person's Guide to the Orchestra Op. 34/Philadelphia Orchestra, Eugene Ormandy, David Bowie; RCA RCD1-2743 (AAD)</b>	2/85
<b>La Spagna: Music of the 15th, 16th, &amp; 17th Centuries/Atrium Music of Madrid, Gregorio Paniagua; BIS CD-163 (AAD)</b>	7/86

Continued on p. 108



**D**igital Audio conducts its speaker evaluations in conjunction with the Division of Physics at the National Research Council of Canada. This allows us to take advantage of the NRC's anechoic (echo-free) chamber for physical measurements of speaker output. Additionally, we take advantage of their very sophisticated listening test setup.

What follows is the fifth in a seven-part series of speaker reviews designed to give readers a broad look at the marketplace.



## ADVENT LEGACY SPEAKERS

# American Traditional

by Amee Eisenberg

**I**n the beginning there was sound, but there was no bass from small packages. And it came to pass that two young refugees from the lands of MIT and Harvard, named Edgar Villchur and Henry Kloss, put small woofers into sealed boxes and invented the acoustic suspension speaker.

And then there was bass, and it was good. And the youths went forth and formed a company, and they named it Acoustic Research.

And it was fruitful and multiplied; when Kloss moved on in the 1960s, AR begat KLH, which made many acoustic suspension speakers. And KLH made the compact stereos we all had in our dorm rooms in the late '60s, the ones with the round radio dial.

And KLH begat Advent, when Kloss moved on again. And Advent too made acoustic suspension speakers, the Large Advent and the Small Advent, and they covered the earth.

And then, in 1978 Henry Kloss was forced to move again, and Advent begat Boston Acoustics, Apt Corporation, Kloss Video Corporation (where Kloss perfected his dream of manufacturing commercial projection TVs), and a host of others. And later the Advent name was sold to the International Jensen company, where it resides today.

When Advent decided to call their popularly priced two-way speaker system the "Legacy," they knew what they were doing: If ever a piece of audio gear could be said to have a legacy, these loudspeakers are it.

And today, 30 years after the first acoustic suspension speakers were built in Cambridge, Massachusetts, the Advent Legacy embodies exactly the same basic tenets of speaker design that Kloss and Villchur originally laid out—

---

*If ever a piece of  
audio gear could be  
said to have a legacy,  
these loudspeakers  
are it.*

---

an acoustic suspension enclosure to produce good bass response from a small package, and a two-way system to minimize the frequency and phase response anomalies inherent to electronic crossover networks.

So the Legacy is a two-way, sealed box system, with a 10" woofer and a 1" ferrofluid cooled dome tweeter. The Legacys sit on the floor and stand almost 2½ feet high. They are good-looking, with pecan wood cabinets and black grill cloths that fit flush to the sides. The base and top are beautifully finished. The 1968 original Large Advent—one of the true classics of hi-fi—nearly duplicates these basic specs with the exception of the ferrofluid, which hadn't been invented yet, and of walnut instead of pecan.

The design is no less valid today. Three-way designs were long held to be a requisite for high power handling capability, but with modern driver technologies like ferrofluid cooling, the two-way Legacy is rated for up to 500-watt peaks, and 100 watts continuous power.

One of the classic trade-offs of speaker design is the balance of bass response, cabinet size and efficiency. This Advent is no excep-

tion: we measured sensitivity to be 86 dB SPL (at 1 watt at 1 meter), which means that even in smaller rooms at least moderate power will be needed, and more will likely be an asset.

### A Simple Sound

In their price class, the Legacies are nice sounding speakers. Advent uses good quality components and a simple crossover network. The result is clear, balanced sound.

Listening to pink noise is a favorite speaker evaluator's trick. Just as white light contains all colors, but is perceived as having none of its own, pink noise includes all sound frequencies (with equal amplitude per octave of bandwidth) but has no single perceptible frequency—or pitch—of its own. Pink noise properly reproduced, then, should sound just like noise. Any coloration or "pitchiness" speaks of flaws in the loudspeaker.

The Legacies recreated pink noise with a slightly nasal quality. Listening to the speaker play piano music, the same slight coloration showed up again.

Otherwise, midrange frequencies were smoothly reproduced and clearly articulated. Bass performance was fine, and the Legacy comes with placement instructions to remind you that to a great extent, bass reproduction in a given room is a function of speaker placement.

### Scoping out the Statistics

From the measurements taken in the anechoic chamber of Canada's National Research Council, we were able to graph the Legacy's frequency



response, both on- and off-axis. Measurements were made at 200 frequencies between 20 Hz and 20 kHz (the range of the hearing spectrum) with the microphone placed in 35 different positions (Fig. 1).

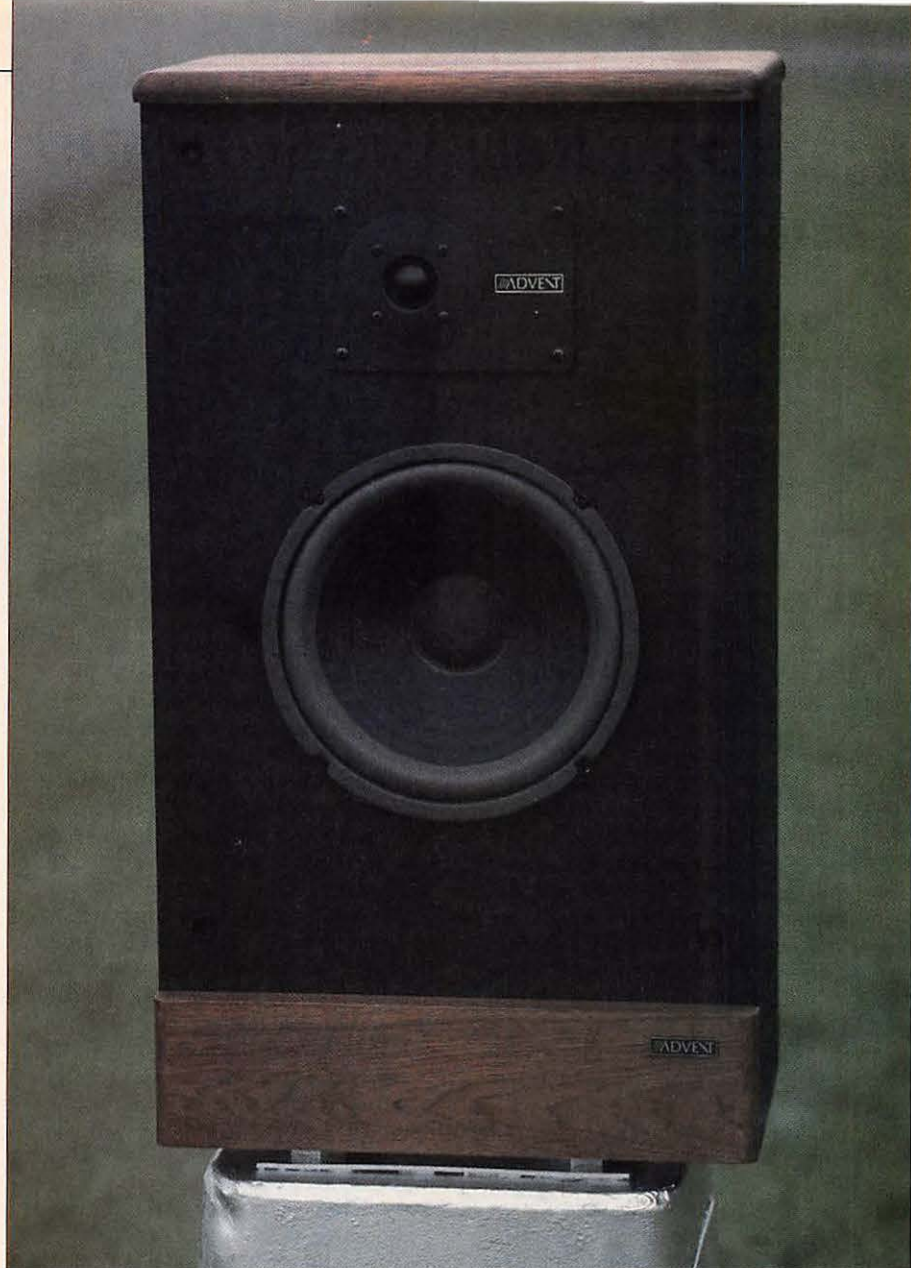
The top line depicts the sound as it would reach a listener sitting directly in front of the speaker (on-axis). The lower two lines respectively show the average of measurements made with the microphone located from 30 to 45 degrees, and from 60 to 75 degrees off-axis. The total picture gives you an idea of how effectively the Legacy speakers reproduce pure tones in their entire front hemisphere under laboratory conditions.

The picture shows quite a smooth bass response and high end. Response anomalies are present between 1 and 5 kHz, while the rising midrange response below 1 kHz helps explain some of the sound quality we heard while listening. Overall, the curves are fairly smooth, and dispersion is quite uniform except for roll-offs in the off-axis high frequency measurements.

#### The Bottom Line

Priced as they are at under \$400, the Advent Legacy speakers could make a pleasant stopping point on your quest for the ultimate stereo system. In blind tests, listeners consistently rated their sound to be pleasant. Greater fidelity can perhaps be had, but it's liable to bring a greater price tag, too.

*Amee Eisenberg is a freelance writer who lives and works in New Hampshire.*



## AT A GLANCE

### ADVENT LEGACY LOUDSPEAKERS

**Design Principle:** 2-way

**Sensitivity:** 86 dB SPL at 1 watt at 1 meter

**Nominal Impedance:** 8 ohms

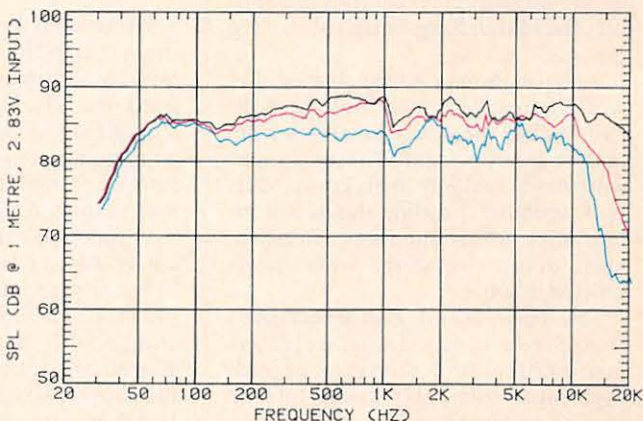
**Minimum Recommended Amplifier:** N/A

**Cabinet:** Pecan wood veneer

**Dimensions:** 28.25" x 16" x 9.75"

**Weight:** 46 lbs each

**Suggested retail price:** \$399.95 per pair



*Advent Legacy frequency response measured (top to bottom) directly on-axis, 30-45° off-axis, and 60-75° off-axis. A smooth bass roll-off and rising midrange below 1 kHz tell the story.*





# NEW RELEASES SPOTLIGHT

by Andrew Taylor



**John Philip Sousa**  
**The Sousa Legacy Volumes I & II**  
 The New Sousa Band, Rochester  
 Philharmonic Orchestra  
 Conductor: Keith Brion  
 Bainbridge Records BCD6250  
 Total disc time: 61:36

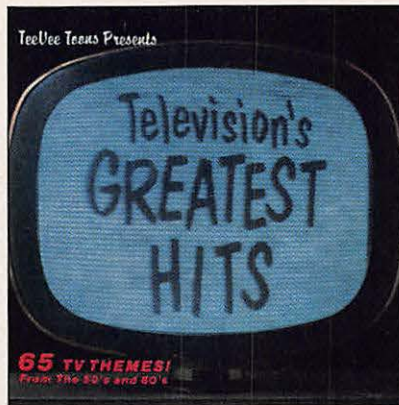
Spread out your old college blanket in your living room, grab some cold fried chicken and potato salad, uncork a bottle of chilled California Chardonnay, dump some ants on the floor, and pop this disc in your player. It'll be summer in the park all over again, with the local band blaring out a brisk Sousa march into the warm afternoon air.

John Philip Sousa is undeniably our country's most celebrated band composer. His arrangements and compositions for the U.S. Marine Corps band—and later for his own touring group—speak with a voice that is vibrantly American.

Bainbridge Records has placed two albums onto this Compact Disc. The first is played by The New Sousa Band—an ensemble that tries to duplicate the March King's original touring group.

Because Sousa orchestrated his works for outdoor marching band, he had to alter the arrangements for his indoor concert band. These changes were made verbally to his group, with each member handing down the information to his successor. Remarkably, many alterations were never written down.

The New Sousa Band recreates these revisions from original manuscripts, first printings, recordings, and with help from former Sousa musicians. The result is a bright, clear sound. "Semper Fidelis," "The Liberty Bell" (a familiar tune for all you Monty Python fans), and "El Capitan," all march



briskly forward, as they should.

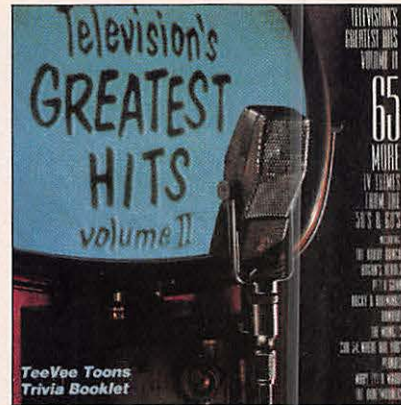
Part two of the disc works on an opposite principle, affording Sousa the fullness and grandeur of an entire symphony orchestra. "The Washington Post" seems especially suited to the larger ensemble. All the tracks are conducted by Keith Brion, who has an obvious love and respect for Sousa's genius.

The concert ends with Sousa's most famous work—"Stars and Stripes Forever"—with the hummable tune and the famous fast-and-fiery piccolo solo. After this blast of nostalgia you can roll up your blanket, pack up the bones, put the ants back in their jar, and march back into the real world.

**Various and Sundry Artists:**  
**Television's Greatest Hits**  
**Television's Greatest Hits Vol. II**  
 TeeVee Toons TVT 1100 CD (Vol. I),  
 TVT 1200 CD (Vol. II)  
 Total disc time: 72:17 (Vol. I),  
 73:14 (Vol. II, and that's not a misprint)

What could be more American than theme songs from the dark confines of television history, all brought to you with the clarity of digital sound? Thanks to TeeVee Toons, 130 of these evanescent nuggets of Americana will now be eternal inscriptions in the annals of time. Amen.

Volume I is organized as a theoretical average viewing day (for your average trivia-crazed, bug-eyed couch potato). The marathon begins, of course, with the theme from "Captain Kangaroo," followed by 13 other kiddie show themes (keep your Bufferin bottle handy). Next come 18 classic sit-coms, including the theme from "Mr. Ed"—recently rumored to have a satanic message when played backwards. (I say it's satanic in either di-



rection; listen at your own risk.) Then, chart a course for adventure in the afternoon segment with themes from "Star Trek," "Batman," and 15 other memory-joggers. Later, thrill to long-cancelled prime time dramas—"Mission: Impossible," "Dragnet," and 12 others. And cap off the evening with "The Tonight Show" theme and "Syncopated Clock," the hoary intro to *The Late Late Show*.

And just when you thought it was safe to go back to the kitchen for your TV dinner and bottle of Bartles and Jaymes, along comes *Volume II*—a deeper look into the clouded video psyche. Here you'll find 73 more minutes in the same format, covering almost every other theme song imaginable from the '50s and '60s.

TeeVee Toons really packed these CDs to the limit. Both contain almost every track from their two-album counterparts—Volume I of which enjoyed phenomenal sales, breaking into *Billboard's* 1986 Top 100 LPs. Furthermore, each package has a comprehensive "Tee-Vee Toons Trivia Booklet" with a blurb about every theme song and show.

Sure, the sound is *el stinko* on some of the tracks. But remember that those come from the original recordings, if not straight from the video archives. Most of the cuts that sound good were re-recorded for the release.

In any event, consider the unlimited possibilities these discs offer. You and your swell condo neighbors could play "Name That Television Theme," with the local nerd at the remote control. First prize could be the disc. Second prize could be *both* discs.

Better still, maybe the FBI could use *Television's Greatest Hits*. Placed on continuous repeat, the discs would be highly effective during interrogations—even better than the bright light and rubber hose.



# FREE INFORMATION

## Digital Audio Reader Service Index

For more information about products advertised in this issue, circle the corresponding number as listed below.

Please use the Reader Service Cards on the facing page to receive free information about the products featured in this issue of *Digital Audio* magazine.

Your information request will be processed and sent to the individual manufacturers you wish to contact. They will then mail their product information directly to you.

It will take about 6 weeks from the time you mail the Reader Service Card to receive the information you request.

Be sure to print your name and address clearly, and to double-check that the numbers you circle correspond with the manufacturer's numbers in this month's Reader Service Index, at right.

We welcome your comments on *Digital Audio*, and invite you to tell us your experience with the products and manufacturers mentioned in this magazine.

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88	Custom Woodwork & Design Inc.	10
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#### Buyer's Guide

288	Jeremiahs Compact Disc	99
280	The CD Store	99
283	Cutlers Records & Tapes	99

## It's perfect. I hate it!

Sound Quality = 10    Performance = 1  
I Just Can't Stand the Music!

Has this ever happened to you? You're listening to a brand-new disc. The sound is demonstration-quality. But the performance makes you reach for the "off" button.

Using our 1-to-10 rating system, please tell us what you think about the performance and the sound on your Compact Discs. Just fill out the card opposite this page to rate your CDs. We'll publish the results—the best and the worst music on CD—in future issues of *Digital Audio*.







# WHAT'S ON CD

## Update: 360+ New Releases

compiled by Lou Waryncia

The following represents an update of Compact Discs currently available or scheduled for release as of March 1987. Compact Discs that were recorded, mixed, and mastered on digital equipment (DDD) are marked with the symbol ▲.



### POP/ROCK

#### Arista Records

Krokus: Alive & Screamin' ARCD-8445

#### Atlantic Records

Atlantic Rhythm & Blues Volumes 1-7 (Seven separate discs) 81293/99-2  
Hiram Bullock: From All the Sides 81685-2  
Jean Carne: Closer Than Close 90492-2  
Crosby, Stills, & Nash: Crosby, Stills, & Nash 19117-2  
Steve Flagg: Real Highlife 81657-2  
Genesis: Selling England by the Pound 19277-2  
Genesis: Three Sides Live (Two discs) 2000-2  
Genesis: Wind and Wuthering 38100-2  
Chris Hunter: Chris Hunter 81673-2  
Ben E. King: Stand By Me—the Best of Ben E. King 81716-2  
Led Zeppelin: Led Zeppelin II 19127-2  
Led Zeppelin: Led Zeppelin III 19128-2  
Levert: Bloodline 81669-2  
Gloria Loring: Friends & Lovers 81679-2  
Meatloaf: Blind Before I Start 81698-2  
John Parr: Running the Endless Smile 81689-2  
Ratt: Dancing Under Cover 81683-2  
Regina: Curiosity 81671-2  
Shannon: Love Goes All the Way 81658-2  
Stacy Q: Better Than Heaven 81676-2  
Mike Stern: Upside Downside 81656-2  
Pete Townshend: Live 90553-2  
Yes: Classic Yes 19320-2  
Yes: Close to the Edge 19133-2  
Zebra: 3.V 81692-2

#### Bainbridge Records

Ferrante & Teicher: American Fantasy BCD 6266  
Ferrante & Teicher: 30th Anniversary on Stage BCD 8003  
Jerry Fielding: A Little Bit of Ireland BCD 1020  
Mantovani: Incomparable BCD 6269 ▲  
Mantovani: Magic of the Mantovani Orchestra Live at Royal Festival Hall BCD 8001  
Mystic Moods Orchestra: Another Stormy Night BCD 6216  
Mystic Moods Orchestra: Erogenous BCD 6215

#### Capitol Records

Duran Duran: Notorious CDP 46415  
Judy Garland: Live at Carnegie Hall CDP 46470  
Crystal Gayle: Classics CDP 46459  
J. Geils Band: Flashback CDP 46551  
Don McLean: American Pie CDP 46555  
Queensryche: Warning CDP 46557  
Frank Sinatra: Close to You and More CDP 46572  
Frank Sinatra: In the Wee Small Hours CDP 46571  
Frank Sinatra: Sinatra's Swinging Sessions and More CDP 46573  
Frank Sinatra: Songs for Singin' Lovers CDP 46570  
WASP: Electric Circus CDP 46346

#### CBS Records

Gregory Abbott: Shake You Down CK 40437  
Beastie Boys: Licensed to Kill ZK 40238

#### Dunhill Compact Classics

Back Seat Jams—Works by the Five Satins, Little Ceaser, Ritchie Valens, Mellow Kings, Casinos, others DZS031  
Beach Classics—Works by Beach Boys, Trashmen, Ronny & the Daytonas, Dick Dale & Del Tones, others DZS030  
Toga Rock—Works by the Swinging Medallions, Soul Survivors, Kingsmen, Sam the Sham, Tommy James & the Shondells, Mitch Ryder, others DZS029

#### Geffen Records

Peter Gabriel: Plays Live (Two discs) 4012-2  
Lone Justice: Shelter 24122-2

#### IRS Records

General Public: Hand to Mouth IRS 5782

#### Island Records

Wally Badarou: Echoes 90495-2  
John Martyn: Piece by Piece 90507-2

#### Manhattan Records

Phyllis Hyman: Living All Alone CDP 46422  
Shirley Jones: Always in the Mood CDP 46323  
Pieces of a Dream: Joyride CDP 46424

#### MCA Records

Steve Earle: Guitar Town MCAD-5713  
Triumph: Sport of Kings MCAD-5786

#### PolyGram Records

Deep Purple: The House of the Blue Light 823 777-2

#### Ranwood Records

Tennessee Ernie Ford: Favorite Hymns R-8229-CD  
Jim Nabors: Hymns & Country Favorites R-8231-CD  
Lawrence Welk: The Best of Lawrence Welk R-8226-CD  
Lawrence Welk: Dance to the Big Band Sounds R-8228-CD  
Lawrence Welk: Reminiscing R-8227-CD  
Lawrence Welk & Myron Floren: World's Greatest Polkas R-8230-R

#### RCA Records

Samantha Fox: Touch Me 1012-1  
Love & Rockets: Express 6011-1

#### Sire Records

The Cult: Love 25359-2  
Depeche Mode: People Are People 25124-2  
Pretenders: Pretenders II 3572-2  
Talking Heads: Talking Heads 77 6036-2

#### Twin Tone Records

The Feelies: The Good Earth TTCCD 8673

#### Warner Bros. Records

America: History—Greatest Hits 3110-2  
Association: Greatest Hits 1767-2  
Black Sabbath: Paranoid 3104-2  
Alice Cooper: Billion Dollar Baby 2685-2  
Deep Purple: Machine Head 3100-2  
DelFuegos: Boston, Mass. 25339-2  
Falco: Emotional 25522-2  
Emmylou Harris, Dolly Parton, Linda Ronstadt: Emmylou Harris, Dolly Parton, Linda Ronstadt 25491-2  
Madhouse: 8 25545-2  
Mark O'Connor: Stone from Which the Art Was Made 25539-2  
The Time: What Time Is It? 23701-2  
Van Halen: Van Halen 2 3312-2  
Neil Young: Tonight's the Night 2221-2

#### Warner Special Projects

Otis Redding: The Ultimate Otis Redding 27608-2



### SAMPLERS

#### ProArte Records

ProArte—A Classic Experience CD Sampler CDM 800 ▲

#### Pro Jazz Records

Pro Jazz—Jazz...The Digital Age CD Sampler CDJ 600 ▲



### SOUNDTRACKS

#### Atlantic Records

Playing For Keeps: Original Motion Picture Soundtrack 81678-2

#### Bainbridge Records

Sounds of Screen Orchestra: Favorite TV Themes BCD 6261





# WHAT'S ON CD

## Capitol Records

Fiddler on the Roof: Original Motion Picture Soundtrack CDP 46091  
New York, New York: Original Motion Picture Soundtrack CDP 46090

## Geffen Records

Little Shop of Horrors: Original Motion Picture Soundtrack 24125-2

## PolyGram Records

Hoosiers: Original Motion Picture Soundtrack 831 475-2



## SPOKEN WORD

## Caedmon Records

Athol Fugard: Blood Knot/Athol Fugard, Zakes Thomas (Two discs) Z392-2  
Alec Wilder: Lullabies and Nightsongs/Jan DeGaetani Z1777



## ENVIRONMENTAL/SOUND EFFECTS

## Gateway Records

101 Sound Effects GCD 4613

## Moods Records

Moods—Sounds of Relaxation Volume 1/Tropical Rain Forest; Thunderstorm Terror EVCD 28105/6  
Moods—Sounds of Relaxation Volume 2/Caribbean Island; Sailboat Voyage; Ocean Surf EVCD 28103/4



## JAZZ

## Accord Records

Stephane Grappelli & Slam Stewart: Steff & Slam 233076  
Abdullah Ibrahim: Dollar Brand—Duke's Memories 233853  
Pinetop Perkins: Pinetop Perkins with Luther Johnson Jr. 233520

## Ades Records

Claude Bolling: The Big Band Panorama 14081-2

## Atlantic Records

Ahmad Jamal: Live at the Montreal Jazz Festival 81699-2  
Mal Lewis: 20 Years at the Village Vanguard 81655-2

## Crusaders Records

Joe Sample & David T. Walker: Swing Street Cafe CRPD-5785  
L. Subramaniam: Blossom CRPD-5784

## Hindsight Records

Harry James: Big Band Recordings HSR-406-CD  
Artie Shaw & his Orchestra: 22 Big Band Recordings HSR-401-CD

## Living Music Records

Eugene Friesen: New Friend LD0007▲  
Paul Halley: Pianosong LD0009▲  
Oscar Castro-Neves: Oscar! LD0010▲  
Paul Winter: Callings LD0001▲  
Paul Winter: Missa Gaia/Earth Mass LD0002▲  
Paul Winter: Wintersong LD0012▲  
Paul Winter Consort: Concert for the Earth LD 0005  
Paul Winter Consort: Icarus LD0004▲  
Paul Winter & Friends: Living Music Collection '86 LD0008▲  
Danny Zeitlin: Homecoming LD0011▲

## Manhattan Records

Tania Maria: Lady from Brazil CDP 46425

## MCA/Impulse Records

Count Basie: And the Kansas City Seven MCAD-5656  
Randy Bernsen: Music for Planets, People, & Washing Machines MCAD-5756  
Art Blakey: A Jazz Message MCAD-5648  
Henry Butler: Fivin' Around MCAD-5707  
Benny Carter & Orchestra: Further Definitions MCAD-5651  
John Coltrane: From the Original Master Tapes MCAD-5541  
John Coltrane: With Johnny Hartman MCAD-5661  
John Coltrane: A Love Supreme MCAD-5660  
Crusaders: The Good & Bad Times MCAD-5781  
Duke Ellington: Meets Coleman Hawkins MCAD-5650  
Gil Evans Orchestra: Out of the Cool MCAD-5653  
George Howard: A Nice Place to Be MCAD-5855  
Ahmad Jamal: The Awakening MCAD-5644  
Henry Johnson: You're the One MCAD-5754  
Quincy Jones & Orchestra: The Quintessence MCAD-5728  
B.B. King: Blues & Jazz/The Electric B.B. King His Best MCAD-5881  
B.B. King: Live at the Regal/Live at the Cook MCAD-5877  
B.B. King: Six Silver Strings MCAD-5616

Mike Metheny: Day in—Night Out MCAD-5755  
Charlie Mingus: The Black Saint & the Sinner Lady MCAD-5649  
Oliver Nelson: Blues and the Abstract Truth MCAD-5659  
Giles Reeves: Wunjo MCAD-5819  
Sonny Rollins: On Impulse! MCAD-5655  
Spyro Gyra: Carnival MCAD-1663  
Spyro Gyra: City Kids MCAD-1445  
Spyro Gyra: Free Time MCAD-1468  
Spyro Gyra: Spyro Gyra MCAD-1651  
Cliff Sarde: Every Bit Better/Waiting MCAD-5859

## Narada Records

Michael Jones: Seascapes ND-61004▲  
David Lanz: Heartsounds ND-61003▲  
David Lanz & Michael Jones: Solstice ND-61008▲

## Pro Jazz Records

Art Blakey & the Jazz Messengers: New Year's Eve at Sweet Basil Live! CDJ 624  
Ronnie Cuber: Two Brothers/David Sanborn CDJ 623▲  
Dukes of Dixieland: Tiger Rag CDJ 620▲  
Manhattan Jazz Quintet: Autumn Leaves CDJ 625▲  
Minoru Mukaiya: Welcome to Minoru's Land CDJ 626▲  
Rio Nido: Voicings CDJ 622▲  
Saturday Night Live Band: Live from New York! CDJ 621  
Wolverines Big Band: Shanghai Shuffle CDJ 618▲

## Rykodisc Records

Red Clay Ramblers: A Lie of the Mind RCD 10034  
Josh White Jr. & Robin Batteau: Jazz Ballads & Blues RCD 10033▲

## Warner Bros. Records

Jeff Lorber: Private Passion 25492-2

## Wergo Records

Klaus Netze: Purple Sky; Tequila Sunset; Illuminations SM 1057-50

## Who's Who In Jazz Records

Ahmad Jamal & Gary Burton: In Concert KMCD 51004  
Kool Jazz—Live at Midem/Featuring B.B. King, Pat Metheny, Heath Brothers, Dave Brubeck KMCD 26001  
Jacques Loussier: Plays J.S. Bach WWCD 21028  
Wynton Marsalis: Wynton WWCD 21024  
The Sound of Jazz/Featuring Wynton Marsalis, Carmen McRae, Claude Bolling, Chick Corea, Lionel Hampton, Art Blakey, others WWCD 1

## Zebra Records

Randy Bernsen: Mo Wosabi ZEBD-5857  
Indra Lesmana: No Standing ZEBD-5711  
Skywalk: The Bohemians ZEBD-5715



## CLASSICAL

## Abbey-Gimmell Records

Josquin: Missa Pange Lingua; Missa La Sol Fa Re Mi/Tallis CDGIM 009  
Scholars, Peter Phillips  
Palestrina: Masses/Tallis Scholars, Peter Phillips CDGIM 008

## Academy Sound & Vision Records

Berlioz: L'Enfance of Christ/English Chamber Orchestra, Philip Ledger, Fiona Kimm, Benjamin Luxon, Anthony Rolfe-Johnson CDDCA 452  
Buxtehude: Suites & Variations for Harpsichord/Mitzi Meyerson, harpsichord CDGAU 102  
Couperin: Concert Royal/Monica Huggett, violin; Sarah Cunningham, viola da gamba; Mitzi Meyerson, harpsichord CDGAU 101  
Handel: Messiah (Highlights)/Winchester Cathedral Choir, London Handel Orchestra, Martin Neary, William Kendal, Thomas Drew, Margaret Cable, Patrizia Kwella, Richard Jackson CDDCA 525  
Haydn: Trios Nos. 97, 101, & 111/John Hsu, David Miller, Fortunato Arico CDGAU 104  
Leclair: Sonatas for Violin & Bass Continuo/Monica Huggett, violin; Sarah Cunningham, viola da gamba; Mitzi Meyerson, harpsichord CDGAU 106  
Mozart: Sinfonia Concertante for Wind in E-flat Major/J.S. Bach: Concerto for Violin, Oboe, & Strings in c Minor/Vivaldi: Concerto in C Major/Chamber Orchestra of Europe, Alexander Schneider CDCOE 803  
Johannes Ockeghem: Prince of Music; Missa Prolationum; Capella Nova/Richard Taruskin CDGAU 103  
Saint-Saens: Symphony No. 3 (Organ)/London Philharmonic Orchestra, Enrique Batiz CDDCA 524

## Accord Records

Franz Berwald: Duo in D Major; Septet in B-flat Major; Quartet in E-flat Major/Robert Zimansky, violin; Christoph Keller, piano; 149165  
Camerata de Lucerne: Benthien Quartet  
Delibes: Lakme/Les Solistes de Paris, Jesus Etcheverry, Renee Doria, Alain Vanzo, Adrien Legros 149164





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 Music of the Foreign Legion—La Legion Etrangere 139224  
 Johannes Ockeghem: Missa Prolationum; Six Chansons/Clemencic Consort, Rene Clemencic 149167  
 Antonin Pachelbel: Le Paganini de Hautbois/Omar Zoboli, oboe; Antonia Ballista, piano; Giuliana Albisetti, harp 149042  
 Ludwig Senfl: St. Paul Motet; Lied Autobiographie; Chants d'amour; Emperor Maximilian Funeral Ode/Clemencic Consort, Rene Clemencic 149163

## Ades Records

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 Les Grandes Voix Bulgares/Le Mystere des voix Bulgares Volume 1 CD 008  
 Ravel: Alborada del Gracioso; Rhapsodie Espagnole; Mother Goose; La Valse/Paris Opera Orchestra, Manuel Rosenthal 14092-2  
 Ravel: Bolero; Pavane for a Dead Princess; Valse Nobles; Tomb of Couperin/Paris Opera Orchestra, Manuel Rosenthal 14093-2  
 Romanian Melodies—Taragot et Orgue CD 007  
 Stravinsky: Petrouchka; Sonata No. 2 for Piano; Etudes (4); Pieces for Four Hands/Bernard Ringeissen & Andre Gorog 14090-2  
 Villa-Lobos: Piano Works—A Prole do Bebe No. 1; 16 Cirandas; Two Preludes for Guitars/Anna-Stella Schic 14095-2  
 Villa-Lobos: Piano Works—A Prole do Bebe No. 2; Ciclo Brasileiro; Three Choros/Anna-Stella Schic 14096-2  
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 Zamfir: La Doina Roumanie CD 001  
 Zamfir: Music for Flute & Organ Volume 1 CD 003

## Arabesque Recordings

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 Dvorak: Quintet for Double Bass; American Quartet/Portland String Quartet, Gary Karr, double bass Z6558  
 Dvorak: Slavonic Dances (Complete)/Arthur Balsam & Gene Raps, piano Z6559  
 Elgar: Music for Strings/English Chamber Orchestra, Yehudi Menuhin Z6563  
 Rudolf Friml: Chansonette/Eastman-Dryden Orchestra, Donald Hunsburger Z6562  
 Gilbert & Sullivan: The Mikado/D'Oyle Carte Opera Company (Two discs) Z8051-2  
 Gilbert & Sullivan: The Pirates of Penzance; The Sorcerer/D'Oyle Carte Opera Company (Two discs) Z8068-2  
 Hummel: Sonatas Nos. 1 & 6 for Piano/Ian Hobson Z6564  
 Hummel: Sonatas Nos. 2 & 5 for Piano/Ian Hobson Z6565  
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 Bartok: Quartets Nos. 5 & 6/Vegh Quartet E 7719  
 Boulez: Sonatas for Piano (3)/Claude Helffer E 7716  
 China—Classical Instrumental Music of China 65005  
 Couperin: Pieces de Clavecin; Ordre Nos. 6, 11, & 12/Blandine Verlet E 7754  
 Dowland: Lute Music/Paul O'Dette E 7715  
 F. Haydn: Sonatas Nos. 60-62 for Piano; Andante con Variazioni in F Major/Paul Badura-Skoda E 7714  
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 Arnold Bax: Dance of Will Iravel; Paean; Symphony No. 3/London Philharmonic, Bryden Thomson CD 8454  
 Black Dyke Mills Band: The Complete Champions/Major Peter Parkes CD 8483  
 Brahms: Intermezzi Op. 76, 116-119 (Complete)/Luba Edlina, piano CD 8467  
 Britten: Sea Interludes; Passacaglia/Bridge: The Sea/Bax: On the Sea Shore/Ulster Orchestra, Vernon Handley CD 8473  
 Bruckner: Symphony No. 6 in d Minor/Oslo Philharmonic, Yoav Talmi (Two discs) CD 8468/69  
 Chopin: Etudes Op. 10 & 25 (Complete)/Trio Nouvelles Etudes CD 8482  
 Dvorak: Overtures/Ulster Orchestra, Vernon Handley CD 8453  
 Elgar: Symphony No. 1/London Symphony Orchestra, Vernon Handley CD 8451  
 Elgar: Symphony No. 2/London Symphony Orchestra, Vernon Handley CD 8452  
 Finzi: Concerto for Cello/Leighton: Veris Gratia Suite/Royal Liverpool Philharmonic, Vernon Handley, Raphael Wallfisch, cello; George Caird, oboe CD 8471  
 Hamilton Harty: Concerto for Violin; Dublin Variations/Ulster Orchestra, Bryden Thomson, Ralph Holmes, violin CD 8386  
 Mozart: Concertos Nos. 12 & 14 for Piano K 414 & 449/I Musici, Yuli Turovsky, Louis Lortie CD 8455  
 Prokofiev: Romeo & Juliet Suite No. 2 Op. 64; Dreams Op. 6; Pushkiniana Suites/Scottish National Orchestra, Neeme Jarvi CD 8472  
 Rachmaninov: The Bells Op. 35; Vocalise/Tchaikovsky: Romeo & Juliet; Festival Coronation March/Scottish National Orchestra, Neeme Jarvi, Suzann Murphy, Keith Lewis, David Wilson-Johnson CD 8476  
 Sibelius: Historic Scenes/Scottish National Orchestra, Alexander Gibson CD 8393  
 R. Strauss: Sonata for Violin & Piano/Faure: Sonata for Violin & Piano/Lydia Mordkovich, piano; Gerard Oppitz, violin CD 8417

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 Bruckner: Symphonies Zero & Double Zero; Symphony in d Minor; Symphony in f Minor/USSR Minister of Culture Orchestra, Guennadi Rojdestvenski (Two discs) LDC 278851/52  
 Liszt: Hungarian Rhapsodies (Complete)/Magyar Dallok (Three discs) LDC 278801/03  
 Rachmaninov: Concertos Nos. 1-4 for Piano Op. 1, 18, 30, 40/ USSR Symphony Orchestra, Guennadi Provatorov, Victor Eresko, piano (Two discs) LDC 278828/29  
 Rimsky-Korsakov: Quintet for Piano & Strings; Concerto for Trombone; Variations for Oboe; Concerto for Clarinet/Ministry of Defense Orchestra & Solists, N. Nazarov, Y. Pitirimov, L. Dounaev LDC 278815  
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 J.S. Bach: Partitas BWV 825-830/Kenneth Gilbert, harpsichord HM 90.1144/45 (Two discs)





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Beethoven: Symphonies Nos. 4 & 8 (Liszt Transcriptions)/Alain Planes, piano	HM 90.1194
Berlioz: Harold in Italy/Schumann: Marchenbilder Op. 1: Four Pieces for Viola & Piano/Jean-Francois Heisser, Bruno Pasquier	HM 90.1246
William Byrd: Pavans & Galliards/Davitt Moroney, harpsichord (Two discs)	HM 90.1241/42
Cavalli: Xerse/Concerto Vocale, Rene Jacobs, Judith Nelson, Isabelle Poulenard, others (Three discs)	HM 90.1175/78
Josquin Des Prez: Missa Pange Lingua/Ensemble Clement Janequin, Ensemble Organum, Michel Peres	HM 90.1239
Dowland: Lute Songs & Solos/Alfred Deller, Robert Spenser	HM 90.244
Dutilleul: Symphony No. 1: Timbre, Espace, Mouvements/Orchestre National de Lyon, Serge Baudo	HM 90.5159
Hilliard Ensemble: Sumer Is Icomen In, English Medieval Songs/Paul Hillier	HM 90.1154
Claude Le Jeune: Meslangers/Clement Janequin Ensemble; Ensemble de Violles Les Elements	HM 90.1182
Mozart: Concerto No. 22 for Piano/F. Haydn: Concerto No. 11 for Piano/Lithuania Chamber Orchestra, S. Sondecki, Tatiana Nikolaeva, piano	HM 90.5162
Luigi Rossi: Two Oratorios/Les Arts Florissants, William Christie	HM 90.1091
Stravinsky: Sonata for Piano/Schubert: Impromptus Op. 90/Maria Yudina, piano	HM 90.5170
De Visee: Guitar Suites Nos. 1-12; Sarabandes; Menuet en Rondeau/Rafael Andia	HM 90.1186
Vivaldi: L'Incoronazione di Dario/Nice Baroque Ensemble, Gilbert Bezzina, John Elwes, Henri Ledroit, Isabelle Poulenard, Agnes Mellon (Three discs)	HM 90.1235/37

## Hong Kong Records

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Franklin Lei: Early Italian Lute Music	HK 8.220401
Liszt: Fantasia & Fugue on the Theme BACH/Brahms: Variations & Fugue on a Theme of Handel Op. 24/Michael Ponti	HK 8.220399
Respighi: Concerto in Modo Misolidio for Piano; Three Preludes on Gregorian Themes/Sydney Symphony Orchestra, Myer Fredman, Sonya Hanke	HK 9.220176
Robert Schumann: Humoreske in B-flat Major Op. 20/Max Reger: Variations & Fugue on a Theme of J.S. Bach for Piano/Wolf Harden	HK 8.221408

## Hyperion Records

Monteverdi: Olympia's Lament Arias/D'India: Olympia's Lament Arias/Emma Kirkby, soprano; Anthony Rooley, chitarrone	CDA 66106
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## Ina Grm Records

Bayle: Motion-Emotion; Les Couleurs de la Nuit/Acoustionium GRM, Francois Bayle	C1001
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John Harbison: Mirabai Songs; Variations for Violin, Clarinet, & Piano/Collage New Music Ensemble, Janice Felty, mezzosoprano	NR 230-CD
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Schubert: Sonata in E Major D 157; Adagio in G Major D 178; Sonata in C Major D 279; Fantasy in c Minor D 2E; Andante in C Major D 29; Menuet & Trio D 600 & 610; Variations in F Major D 156/Leonard Hokanson, piano	NR 233-CD

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Edita Gruberova: Famous Opera Arias/Munich Radio Orchestra, Lamberto Gardelli	C 101851
Haydn: St. Cecilia Mass/Bavarian Radio Symphony Orchestra & Chorus, Rafael Kubelik, Lucia Popp, Doris Soffel, Horst Laubenthal, Kurt Moll	C 032822
Schubert: Songs (16)/Dietrich Fischer-Dieskau, Gerald Moore, piano	C 140101
Schumann: Songs Op. 35; Liederkreis Op. 39/Dietrich Fischer-Dieskau, Gerald Moore, piano	C140301
Hugo Wolf: Songs/Dietrich Fischer-Dieskau, Gerald Moore, piano	C140401

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Beethoven: Concerto No. 5 for Piano (Emperor); Bagatelles Op. 119/Czech Philharmonic, Vaclav Neumann, Russell Sherman, piano	CDD 261▲
Beethoven: Concertos Nos. 1-5 for Piano (Complete)/Czech Philharmonic, Vaclav Neumann, Russell Sherman, piano	CDD 011▲
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Handel: Sonatas for Flute & Oboe (Complete)/Frans Bruggen, flute; Bruce Haynes, oboe	CDD 296
Handel: Sonatas Nos. 1-6 for Recorder (Complete)/Frans Bruggen	CDD 295
Haydn: Quartet No. 3 in C Major Op. 76 (Emperor)/Dvorak: Quartet No. 12 Op. 96 (American)/Varsovia Quartet	CDD 304▲
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Nazareth: Brazilian Dances/Arthur Lima, piano	CDD 312▲
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Vivaldi: Concerto for Oboe/Marcello: Concerto for Oboe/Platti: Concerto for Oboe/Orchestra of the 18th Century, Frans Bruggen, Bruce Haynes, oboe

### Records International

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Jancsek: Orchestral Works—Danube; Incidental Music to Schluck & Jau; Moravian Dances/Slovak Philharmonic Orchestra, Libor Pesek, Jana Valaksova, Zdenek Husek RIN 7008-2  
Respighi: Sinfonia Drammatica/Slovak Philharmonic Orchestra, Daniel Nazareth RIN 7010-2  
Rimsky-Korsakov: Night on Mt. Triglav/Slovak Philharmonic Orchestra, Libor Pesek RIN 7009-2

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## Dream System

Continued from p. 25

Thirteen floors and five hours later, the speakers were in place and properly adjusted after an elaborate listening session interspersed with time-outs to change the angle of one or the other speaker—a quarter of an inch here, an eighth of an inch there.

If you're lucky enough to hear this setup, or a system like it, you won't be ruined for ever going back to what normal humans listen to; but you'll never forget the experience. It still won't replace a live performance, but hearing sound on a sophisticated system will remain stored in your memory as a reference for judging all future listening experiences.

And furthermore, familiarity with a "dream system" will enable you to communicate on the same level as the serious aficionados of hi-fi. ("Yes, I'm aware of the Astrophonographic Series IV loudspeakers with Spiraloptic II-S cables, but wait till you experience the Duntech 2001s!")

Keep in mind that a true dream setup isn't just a CD player, amplifier, and speakers. Much more goes into assembling a complete system, from the speaker cables and interconnect cables to power cords and tube traps. When you finally hear the music, you're listening to the result of a cooperative effort by every component in the audio chain to deliver the sound with as little distortion and extraneous noise as possible. A weak link anywhere along the line interferes with your system's ability to deliver an accurate signal to your ears.

### Time To Play

Now that our dream system was ready for the real test—a dynamite CD—Victor opened a jewel box and took out a disc worthy of the task: *The Kroumata Percussion Ensemble* (BIS CD 272). Besides being one of the finest CDs ever recorded, the variety of instrumental timbres and phenomenally complex rhythmic passages will tell you in short order how good and how well adjusted your system really is.

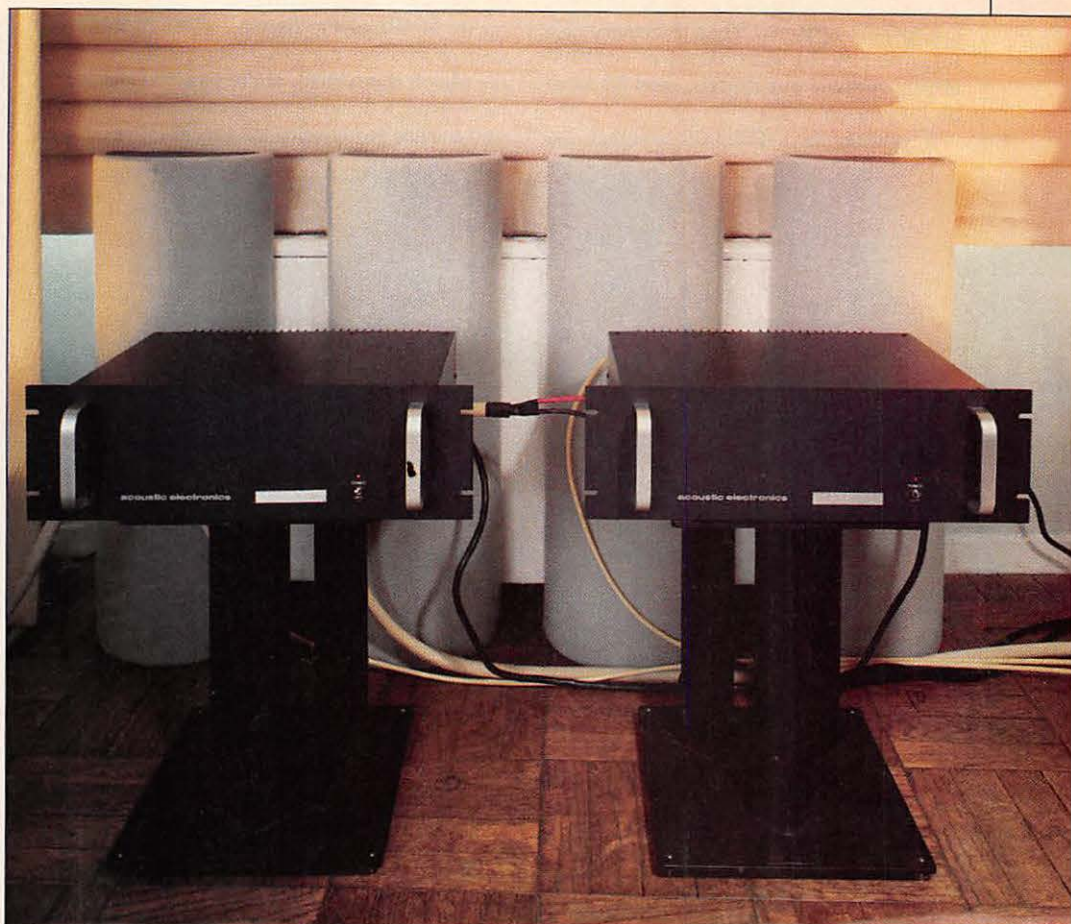
The disc started to play and, try as I might, I couldn't "hear" the speakers. I knew where the sound was coming from, but it wasn't from those two huge monoliths standing not more than 10 feet away. The sounds of the various percussion instruments came from different points in the room *beyond* the speakers. We played many other discs that afternoon, with the same mind-blowing results.



There were no tricks used here. And I was wide awake. The recording, the audio components, and—let's not forget—the arrangement of the components and the room's acoustics all played a part. Let's also not forget the substantial role the audio consultant played in all this.

His job is largely an experimentation process, a never-ending search to discover what components work best together and under what conditions. Results are obtained through application of sheer knowledge, intuition, trial, error, and luck. When you call on a consultant to design a hi-fi system for your home, he or she will analyze the surroundings in your listening room, combine this with your financial commitment and your needs, and come up with a set of components that will work after a certain amount of essential "tweaking."

"No, you don't need thirty thousand dollars," says Goldstein. "Twenty-five hundred to five thousand can get you well on your way to an



## The \$30,000 Dream System

### Compact Disc Players

#### Analogic Design Group CD Player

A modification of the new 16-bit, four-times oversampling Philips machine, this unique player features a hybrid analog stage with two-pole active filter, and vacuum tubes in the output stages. \$1250; \$1300, with remote.

#### Denon DCD-1500 CD Player

This is the home player that received *Digital Audio*'s first five-star rating. It features two-times oversampling, four independent power supplies, and a dedicated D/A converter for each channel to eliminate inter-channel phase difference. \$579.95, with remote.

### Power Amplifiers

#### Acoustic Electronics (AE) Air 3.3 Mono Blocks

With 330 W (RMS) into 8 ohms, these two units provide enough power to

move mountains (or monoliths, for that matter). Clean as a musical whistle and even affordable, considering what mono amps are selling for these days. \$3990/pair.

### Preamplifiers

#### Conrad-Johnson Premier Three

This vacuum tube preamplifier does nothing more than provide outstanding performance at a reasonable price. \$2950.

#### Classé Audio NIL-2 Moving Coil Preamplifier

This is the one to take along on the final trip to a desert island, provided one can drag its 35 pounds of bulk out of the sinking boat. NIL stands for "Natural Impedance Loading," which means being nice to every cartridge. Most people don't realize that correct impedance loading is the secret to achieving tight, powerful

bass, silky smooth highs, or, in one word, optimum performance from the moving coil design. The NIL-2 is a must for the connoisseur. \$1195.

### Tuner

#### Accuphase T-107 (FM only)

The synthesizer that synthesizes the best sonic and aesthetic features known to man or woman, in one gorgeous package. And it doesn't discriminate against rock music. \$925.

### Speaker cables

#### Spectral MH-750 Music Hose

The supreme experience at \$400 for a 10-foot pair.

### Interconnects

#### Spectral MI-500 and Van den Hul Mono Crystal D102 Mark II

These interconnect cables are very expensive but audibly superior, espe-



acceptable system. This is largely determined by the dimensions of your listening room, your budget, and by how picky you are."

If you *do* have \$30,000 to spare (as

many of Victor Goldstein's clients do), and you're *very* picky about pure sound (as all of them are), then you too can have your wildest fantasies fulfilled—if you dream along with Victor. ☐



cially if one likes music. Spectral MI-500: \$135 for 1 meter pair. Van den Hul Mono Crystal: \$85 for 1 meter stereo pair.

### Turntable

**Ariston RC-11 Superieur  
Alphason HR-100s/MCS Tonearm  
Koetsu Onyx Sapphire Cartridge**

A study in transparency and musicality for those who wish to preserve their LP collections in the most sophisticated manner possible. As the name implies, a superior product that will reluctantly concede to play even your old analog records. Of course, the digital ones are far superior! Turntable: \$800; Tonearm: \$895; Cartridge: \$1500.

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Loudspeakers**

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### Accessories

**Tube Traps**

These lightweight, sectional tubes from Acoustic Sciences Corporation (ASC) will, when judiciously used, instantly make unbelievable improvements in the sound of *any* stereo system in *any* room. ASC will custom cut them to fit your room specifications, and offers 40 colors. These tube traps are a must, even though Cartier doesn't carry them. \$374-\$1500, depending on room specifications.

**High Performance AC Cord  
by Discrete Technology**

Don't ask why—just try it. When used in place of the regular power cord, the wonders begin to unfold: tighter bass, better, more believable soundstage, and sweeter highs. It works in preamps, power amps, CD players, etc. Not recommended for clock radios or electric shavers. \$100.

**Total system price:  
approx. \$30,000.**





## LETTERS TO THE EDITOR

### Ladies' Day

You asked, so I'm going to tell you. I'm a member of that rare species known as the female hi-fi addict. (I'm also a third-semester electronics student, so I know a thing or two about the innards of my components.) Most women cringe when a stereo system is being put through its paces by a man because the frequency response of male and female hearing is different. Women are more sensitive to the highest part of the spectrum. Think about what lives in the upper end of the audio spectrum, especially on things like analog LPs; nasty, raspy stuff like harmonic and end-of-the-side distortion. Men tend to be unaware of how harsh and gritty this stuff can sound to the female ear.

A typical scenario goes like this: The gentleman wants to impress the lady. He cranks up the volume and revels in the bass and the bells and triangles. It sounds great to him. Little does he know that, to his companion, it sounds like little table saws are playing along with the orchestra. Needless to say, this tends to discourage women from wanting to own or understand audio equipment. In addition to giving them a flaming headache at the time, it turns them off to high fidelity once and for all.

CDs make audio more palatable to women. Too much treble with no distortion is far preferable to too much treble and distortion. Their size and convenience may help also. It's tough to deal with 12-inch LPs when you have long fingernails.

**Ellen Kelley**  
Central Valley, CA

Why is hi-fi a primarily male interest? Well, my theory is that it's too "complicated" for your average woman. Most women are not as "thing"-oriented as men are. This is due to upbringing, mostly. And there is also the lack of educational advertising aimed at us—most advertisers assume that their customers already know what frequency response, watts-per-channel, and all that esoterica means. So, thoroughly confused and intimidated, most ladies leave the stereo-hunting to the guys. . . .

Why don't we crank it up? Sensitivi-

ty, perhaps? Even I cringe when the well-meaning salesman reaches for that volume knob. Somehow, to guys, loud is best. All I can figure is that guys need to establish a sonic territory where the timid (and lower-powered) fellows dare not intrude. Visit a military male dorm sometime, you'll hear what I mean!

**Lorie A. Johnson**  
Sembach AB,  
West Germany

So you want to hear from the ladies, eh?

I crank up the volume 'til my old man winces! Maybe most women don't like music as loud as men 'cuz their ears are more efficient and can do the job with less effort.

I'm used to it 'cuz as a musician (singer), I get to stand real close to large orchestras playing 120

dB or more. Great. . . .

You (Wayne Green) have been accused of being arrogant, but I notice that no one has accused you of being mundane. Even if your opinions are spikey and weird, they are not bland. Better insane than mundane. I don't always agree with you—if I did I wouldn't have to read *Digital Audio*; it would be like looking into a mirror! Keep on as you are even if it includes occasional attacks of arrogance!

**Virginia Zitzow**  
Reading, MA

### Critique of the Critic

I was willing to keep my peace until I read your December issue. I feel I must register a complaint regarding Wayne Green's so-called "reviews" of classical CDs. In December Mr. Green wrote seven of the 12 classical CD reviews. Don't you think 58 percent is a little too much for one writer?

I would not complain about the column-hogging of Mr. Green if he were an objective, literate, semi-articulate writer. Unfortunately, he seems to think his first-person, conversational style is "cute." I find it wearisome and condescending. I do not need to be told to "go ahead and buy it; if you [don't] love it your heart is made of stone," or

other variations on that theme.

Furthermore, a person's taste in music is their business, but it has no place in a critical review. Obviously, Mr. Green enjoys only waltzes, polkas, and rags (I forgot opera overtures: music without the screaming). His personal likes and dislikes are fine, but to dismiss "Mike Haydn" (Joe's bro', you know) because his music has "nothing to whistle," is simply ignorant and silly. Mr. Green himself says, "This CD should probably be reviewed by a Haydn fan" (i.e. someone who knew what they were talking about).

I am a subscriber to your magazine, and so far, I have been given the History of Wayne Green's Incredible Sound Systems from Childhood to Present, as well as How Many VCRs Wayne Green Has, and What He Does With Them All. Usually I skip over anything he writes, but after I did that in this December issue, there was practically nothing left to read.

Please confine Mr. Green to harmless subscription ads and his "The Last Word" column, where he can drivel about "Ein Straussfest" and double-tone-armed turntables to his heart's content.

**Thaddeus Wert**  
Nashville, TN

*I do tend to get condescending when replying to insulting personal attacks by overbearing readers. As I've clearly stated, my reviews are aimed at newcomers to classical music. We've got Editor-in-Chief David Vernier to cater to the cognoscenti (even the Mike Haydn fans—both of them). How many of my reviews are run per issue is in other hands; like zero in January, which is a very low percentage, considering how many I've done.*

—Wayne

### But Used-Car Salesmen Need Love, Too

I cannot let two errors in your December issue go unremarked. On page 40, Linda Barrett claims that the costumes and sets for the Pacific Northwest Ballet's 1983 production of *The Nutcracker* "were designed by Sendak based on his book's illustrations." Quite the reverse; Sendak based his 1984 book from the set designs. He discusses this matter in his introduction, but perhaps Ms. Barrett only read far enough to excerpt the earlier passage that she quotes.





The other mistake occurs in Jerry Schwartz's review of the Respighi disc on pages 74-75. I pass over the fact that he seems more concerned with the sonics of Telarc's big bass drum than any feature of Respighi's music or Lane's conducting. Less forgivable is his statement that the disc presents "all three parts of the trilogy on a single CD." There have by now been enough recordings of the full cycle on both LP and CD that even the most casual listener should be aware that "Roman Festivals" and not "The Birds" is what fills out the Roman trilogy.

My subscription expires this month, and I do not plan to renew it—not because of these mistakes, but because of the rampant philistinism and used-car-salesman rhetoric of Wayne Green's editorials and reviews. Perhaps if Mr. Green spent more time actually editing the magazine and not using it as a megaphone for his prejudices, such errors would not slip in.

Geoffrey Blum  
El Cerrito, CA

When our December issue was in preparation, the London Symphony Orchestra's *Nutcracker* had not been released on CD, so we had to rely on advance press releases for our information. Informing our readers about this important release before Christmas was foremost in our minds. As for Jerry Schwartz' Respighi review, we've severely reprimanded our staff for letting such a gross error slip through.

—The Editors

## Applause for the Critics

As far as subscribers who continually bitch about what they feel are inaccurate reviews, I think they are out in left field. They just need to supply a few brains to the process to determine what the reviewers' real thoughts are on a particular CD, and make their quality judgments in their own mind. . . . I firmly believe that the reviewers should try to be entertaining and should not shy away from blasting a recording if they feel it should be blasted. If they tone down their criticism, they will begin to sound like reviewers from CBS's *Stereo Review*. To hell with subscribers who write in

to bitch about what they feel is an unfair review. . . .

Bruce Burgess  
Ponte Vedra Beach, FL

I'm a 61-year-old lady who tells everyone I know about CDs. Believe it or not, some people haven't heard about them!

There's nothing in my house I wouldn't part with before I'd give up my CD player (with the possible exception of my husband of 41 years).

Your reviews are flawless—you've never disappointed me yet.

Jeanne Hanner  
Michigan

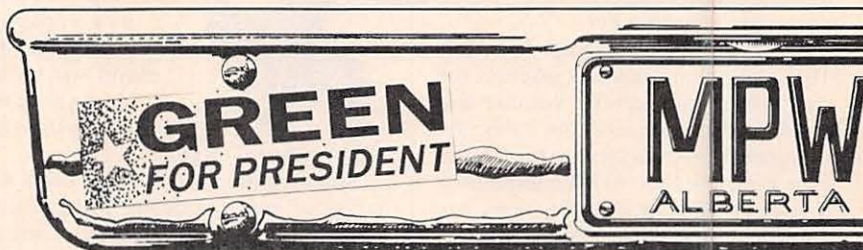
## Green For President?

The equipment reviews and technical articles are good, but I hardly subscribed to *Digital Audio* for reviews

## Promoting Promiscuity?

When I received the October '86 issue of *Digital Audio* and saw the front cover, my thoughts were, "Nothing is free from this modern trend of profanity." I didn't write you at that time. I am a busy man and generally don't have the time to correct all the major errors I see in my fellow man. Believe me when I state that I have several major faults over which I must maintain constant vigilance. . . . However, when I read the letter to the editor, "Pornography or Art" (December, p. 106), . . . I found your remarks to be flippant and discourteous to your readers, regardless of their moral persuasion. . . .

Unfortunately, I decided to then finish reading the remainder of the December letters. The letter "Vive La Difference!" (by the "Eunuch of Eagan") is disgusting and morally



of the likes of Ozzy Osbourne, Ted Nugent, or Blue Oyster Cult. Where are the reviews of new discs such as Spyro Gyra's *Breakout*, Wynton Marsalis' *J-Mood*, or older discs like *Incognito* and *Jesus Christ Superstar*? Some of these discs have been available up north here for a few months.

Regarding Wayne Green's tirade to attract attention, dismissing all music of the last 50 years is certainly a narrow-minded viewpoint, a characteristic for which he ridicules other periodicals. You might as likely shoot people who use Radio Shack computers. Sure he's not thinking of going into politics?

M.P. Wagner  
St. Albert, Alberta, Canada

So far, there's been no official announcement of Wayne running for any office. But stay tuned, presidential campaigning starts soon in New Hampshire. As for the reviews, in this issue we review Wynton Marsalis' *J-Mood*, and three Spyro Gyra discs, including *Breakout*.

—The Editors

abhorrent. It not only promotes sexual promiscuity, as the picture does (this can be found in some lower animals), but it also promotes contraception, the denial of the sanctity of life, which is found nowhere else in nature. I wouldn't find such an article in a medical journal.

Fortunately, my subscription terminates soon. Unless I receive a letter from your magazine stating that you are in the business of digital audio technology and not the business of pornography and moral corruption, I shall not be renewing!

God bless you.

George R. O'Connor  
Meridian, ID

If it saves a subscription (as well as our souls from eternal sin), yes, we are in the business of digital audio technology. But like our poor friend "The Eunuch of Eagan," we try to have a little fun with the technology of entertainment. We'll look forward to receiving your renewal instructions.

—The Editors





## Posies for Sony

Let me tell you about the remarkable experience of having a Sony CD player repaired.

When my Sony D-7 stopped working, I was informed by the authorized service representative in Portland that the unit had a major failure and it would cost more to repair than to replace. The 90-day warranty had expired, so I thought I might be out of luck and a couple of hundred dollars.

However, because of your mention of Sony's support services, I decided to send the unit to the national service headquarters in New Jersey. About a week later I heard that the unit was in the hands of Harriet Capito at the San Jose service center, was being repaired and there would be no charge. On top of that, Ms. Capito is a pleasant person to deal with, returns phone calls promptly and does what she promises.

I'm still dizzy with excitement at such treatment from a big company, but I'm delighted to find it.

**Michael O'Brien**  
Lake Oswego, OR

After six months of careful use, mostly patched into a car system, my Sony D-5 controls began sticking, rendering the unit all but useless. The retailer was of no help and a visit to a factory-authorized repair station resulted in a repair quote of "at least \$85." I then wrote to Sony Customer Relations to explain the problem and ask for either a replacement unit or reasonably priced repair. Their reply stated that a replacement would be made upon return of my defective unit to the service center in Hollywood, FL. I duly returned my unit and received a phone call from their representative shortly thereafter, a pleasant and courteous fellow named Martin Feldman. He indicated that, if I was agreeable, he would send a D-7S as a replacement since D-5s were not readily available. Of course I was agreeable. Two days later it arrived and I have it happily in use. Am I satisfied? Of course. What more could I ask. Sony exchanged a first generation portable for a much more sophisticated machine. It seems to me that they care a great deal about their customers and deserve public credit.

**Richard Coane**  
Temple Terrace, FL

## Ds Are Trying Times

We recently purchased components for playing CDs and started a subscription to your magazine to learn more about them. But what's the meaning of the letters following the identification number of each disc, i.e. DDD? I haven't yet found an explanation in your magazine.

**Mrs. John C. Ludlum**  
Morgantown, WV

*The code represents a standard set by the Society of Professional Audio Recording Studios (SPARS). The first letter identifies whether the recording was done with digital or analog equipment. The second and third letters pertain to how the music was mixed and mastered, respectively.*

—The Editors

... I get a kick out of yuppie chatter in the CD racks at music stores. Not long ago, I overheard a trenchcoated yuppie educating his too easily misinformed mate about the SPARS Code. "You see, you don't want to buy anything with As in the code. That means the recording starts out audio. The D means digital and all three should be Ds if it's going to sound any good." I was on the floor in hysteria. I wonder if in his quiet time, he relaxes to the soothing melody of time code. Strictly Ds for him.

**Rob Koop**  
Bangor, ME

## The Ultimate Frisbee Challenge

A challenge to your readers. Try to find a CD with worse sound than the recent re-releases of Lou Reed's early group, the Velvet Underground, on Verve. I recently purchased copies of *White Light/White Heat* and *The Velvet Underground: In Nikko*. To enumerate their flaws would be pointless as nothing is good about their sound. Buy the albums and play them on your child's Fisher-Price phonograph and you will enjoy them just as much. As for mine, Frisbee anyone? A 1-minute for sure. Thanks, Verve!

**Robert Kleyn**  
Yuma, AZ

## Fight Brief CDs! . . .

I was pleased to see that in earlier issues you took up the fight for jewel boxes, but there is another battle I would like to see you wage and that is against CDs with less than at least 60 minutes of music. Is there any excuse

for the CD copy of the LP *Janis Joplin's Greatest Hits*? A CD can carry a lot more hits and Janis certainly had them! Then there is your endorsement of the *Oldies But Goodies* collections from Original Sound Corp. While these guys are doing a great job of digitally transferring old masters, I can't bring myself to lay out the bucks for 30 minutes of tunes. I don't mind CD reissues of classic LPs—Miles Davis' *Sketches of Spain* comes to mind—but shouldn't we be pressuring the record companies to take a hint from the great job Motown is doing by doubling two LPs on one disc?

A fine magazine like yours should, I think, take up these issues. You are the voice of the CD-buying public and we ought to let the record companies know that we won't stand for being ripped off like this. If we don't protest loudly and quickly, it may soon be too late.

**S. Hadley**  
Toronto, Canada

*Due partly to contractual obligations and royalty agreements, record companies often cannot add more material to discs from previous recordings. Also, recording costs can be a factor in determining a recording's length. Until discs become cheaper to manufacture and new royalty agreements can be negotiated, the cost of a CD per minute will continue to remain high compared with other recording formats.*

—The Editors

## . . . And Cardboard Boxes!

Explain it to me one more time! Is the current high price for CDs caused by: 1) high production costs, 2) high packaging costs, or 3) high demand/short supply? When an audio enthusiast considers what he's getting: high-quality reproduction on high-quality software, packaged in high-quality packages (jewel boxes), the current \$12-15 price range should not be considered unreasonable.

But now once more I read in your November issue (p.12) of another attempt by Moss Music Group to market cardboard "wallets" for CDs. I thought the public's negative reaction to certain companies' attempts to market cardboard "wallets" last year was clear enough to put this issue to rest once and for all. As long as CDs are in short supply and quality control





is maintained, inferior packaging will not make a significant reduction in retail prices.

Would an audiophile agree to less stringent quality control production methods to drive down retail costs? This one wouldn't. If consumers are really concerned with the price they have to pay at the cash register, they should sell their CD players and revert back to LPs—they are packaged in cardboard, are produced on cheaper software under less stringent quality control. Remember all those LPs on your shelves housed in worn and tattered cardboard sleeves that sound like "snap, crackle and pop" breakfast cereal when you play them? That's what you get for \$5.

Why does industry always insist on fixing something that's not broken? Can't we for once leave well enough alone? My vote for the new cardboard "wallet" is an unequivocal NO! I will never, but never, buy a CD in a cardboard wallet! I'm happy with what I'm getting for my money, and for all of those who want to cut corners on CDs, all I have to say is "To hell with you!"

**John L. Drummond**  
U.S. Army, Seoul, South Korea

*We also hope manufacturers of CDs are getting the hint about cardboard wallets. All three of your theories of why CDs are so expensive are essentially correct, but there's more to it. Although demand for CDs is high, unit sales are still far below those for cassettes and LPs. To recover high manufacturing costs spread out over a lower volume of sales, prices for CDs have to be higher.*

—The Editors

## Paying More for Missing Tracks

Mr. Lee Townsend's apology on behalf of ECM over the missing encore from Keith Jarrett's *Koln Concert* CD (September, p. 125) is just not good enough. Now that they are issuing it in full on CD, what are we owners of the first CD supposed to do? Fork out another \$17 for another copy? ECM should honor its obligations to the consumer by offering a straight swap of the new CD for the old.

But ECM's sins don't stop there. I recently went out and bought a copy of the Chick Corea/Gary Burton *In Concert, Zurich October 28, 1979* CD, got it home and to my horror discovered that the whole of side three was

missing! (I specifically bought it for the solo 15 minutes of Corea). The packaging contains no mention of the missing music to warn the buyer. If ECM tells me that I should have checked the track titles, I say they are joking—I own more than 150 CDs and 3000 albums. Remembering each track title would require a computer. Once again, ECM rips me off.

I then bought the Corea *Children's Songs* CD, which clocks in at a shameful 32:33. Guiltily, ECM then added an "Addendum" of 5:10 to flesh out the time. The piece is a total clash with the rest of the CD, which is solo Corea, whereas the addendum is a string quartet. Was there no one at ECM with the imagination enough to realize that here was the perfect place for the missing 15 minutes from the *Zurich* CD?

I have wound up with three ECM CDs which all leave me dissatisfied, and I'm about \$50 poorer for the privilege.

**Graham L. Rogers**  
Athens, Greece



## A Box of Suggestions

What amazes me is:

A) The consistent late appearance of CDs weeks after the appearance of LPs. Given the lead time from completion of recording to sale of anything in the store, it ought to be possible for CDs to appear coincident with LPs.

B) The huge volume of the CD box. It seems to me that in terms of volume, a CD box occupies more than 2/3 the volume of a regular LP.

C) The fact that double albums come in boxes that are as thick as three standard boxes. If this is necessary because of the double hinge, then why don't they put double albums in two single album boxes?

D) That they don't put a double album on both sides of a single CD. So many "old" discs transferred to CD hold less than 40 minutes of play. Why haven't more manufacturers emulated Motown and produced double albums on a single CD?

**Jan R. Harrington**  
New York, NY

*Compact Discs are now appearing closer, if not simultaneous, to the release time of LPs. Again, contractual obligations with artists often prevent record companies to add or double material to discs. See the editors' note above.*

*For a number of technical reasons—from labeling to fundamental manufacturing requirements—encoding both sides of the CD with data would be economically unfeasible, both for record companies and for the consumer.*

—The Editors

## The "High" In Hi-Fi

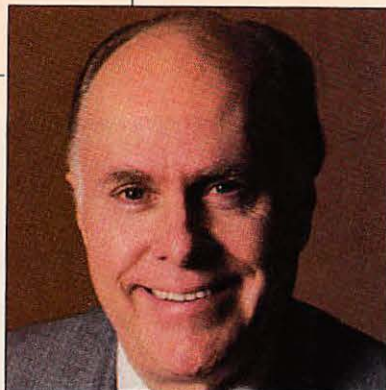
I realize it is a lot of fun reading about, contemplating, and buying new audio equipment. There is an undisputed "high" that results from taking that plastic wrapped unit from its styrofoam packing. The duration of the "high" is extended when the owner's manual is removed from its plastic envelope and one reads the opening sentence which extends congratulations on buying such a fine piece of equipment. The "high" is further extended by the aroma that goes with the initial operation of new electronics. 'Tis far sweeter than that of any opium den and almost as addicting. I know because I have experienced it many times (the electric one, not the smoky one). But, unless one has a very minimum quality audio system, the potential for improving sound through better amplifiers, CD players and speakers is much less than what can be achieved by improving the overall acoustic performance of the listening room and compensating for the remaining imperfections through the use of an environmental equalizer.

**R.B. Ormsby**  
Newhall, CA

*Funny you should mention it. On page 14 Ken Pohlmann gives us hints on Upgrading Your System, Part III: The Listening Room.*

—The Editors





## THE LAST WORD

# Disc or DAT

by Wayne Green

**S**ome of the big boys are saying they're holding back digital audio tape (DAT) through fear of home copying of CDs. We've been through these alarms and excursions before, usually finding the concerns to be blown all out of proportion.

It wasn't long ago that Disney was suing Sony to try and stop video recorders from being sold, citing the imminent death of the movie industry. Well, despite every effort at self immolation, the movie industry is still around.

The record industry cried wolf all over the place when audio cassette recorders got popular—yet I still seem to see new records pouring out and no noticeable cutback in the lifestyle of composers and recording artists. I haven't even seen a rash of smaller labels going out of business, either.

After two screaming fits of crying wolf, how much attention should we pay to the wringing of hands in anguish over the imagined doom from DAT?

In case you've been driving around in a turnip truck, the DAT era *has* arrived. Nearly every major consumer electronics manufacturer showed a DAT system at the October Audio Fair in Tokyo. Digital audio tape systems make it possible to make recordings with the same sound quality as we get on CDs—maybe even a bit better.

In order to try and prevent consumers from making DAT copies of CDs, the recorders are designed not to be able to record using the same format as CDs. How much will be lost in going from a CD to analog and then back to digital again with a DAT recorder? Not enough to even notice; so the inability to record at 44.1 kHz isn't a significant deterrent to copying CDs.

One factor that might take some pressure off the consumer copying of CDs onto DAT would be a lowering in the cost of CDs. If the new CD-mak-

ing technology proves out we should see a substantial drop in CD prices. With CDs in the LP price range, many consumers may not want to even bother with DAT copying.

There's been talk of trying to build a copy-protection system into DAT recorders. Having been down that road before, I doubt if they'll get anywhere with the concept. We had a

which could be put into the computer's processor chip and which would require a lock in each software program. This system made it so the customer could make any number of copies of the program, but they'd only run on the one computer—the one with the special microprocessor.

Most software firms loved the idea. Adding locks in critical parts of their program was simple. Further, the system made it possible to know exactly who was using every program they'd sold. This was useful for selling improved versions or other associated programs.

The only serious problem with the whole idea was that the modified processor chip would cost perhaps \$5 extra. I talked with the major computer firms and found them uninterested in anything which would add even slightly to the cost of their computer. Both IBM and Apple felt they were not losing enough on their own software sales to warrant changing the processor; and I gathered they felt what was happening to other software firms was not their problem. And that's the way it went. The end result was that most of the small software firms went broke. Thousands of them.

So it's always possible that the worst nightmare of the record industry could come about. Consumers might do to record firms what they did to software firms and rob them into bankruptcy. It was the ease and low cost of copying computer programs which did all this. Most computers can make an absolutely identical copy of a program in a few seconds. Hobbyists went berserk, with some accumulating thousands of programs and offering copies of any of 'em in return for new ones. Computer clubs ostracized members who refused to allow the programs they'd bought to be copied.

When several thousand program-

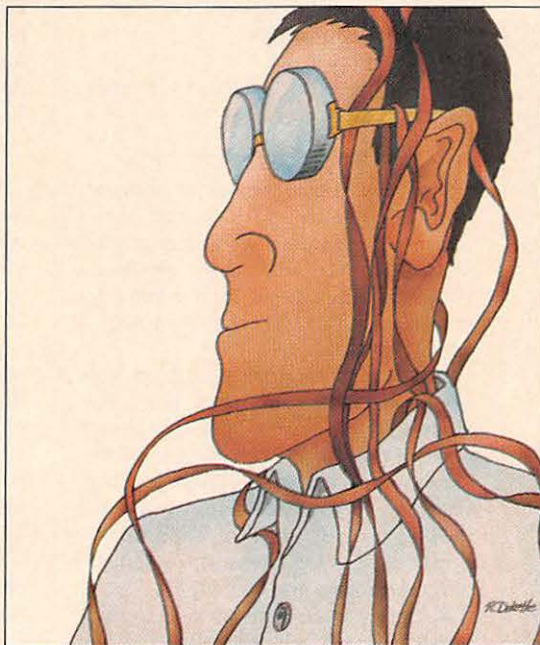


Illustration by Bob Dukette

very similar situation in the computer industry. Several thousand small firms were selling software products and consumers copied them right and left. A study in 1982 showed that 90 percent of people using lower cost programs had not paid for them; they were using rip-off copies.

The rip-off of higher priced software wasn't quite as bad, mainly because many were being used by corporations which preferred paying for the software to getting sued. Other customers paid so they'd get the documentation and customer support.

In 1983 I found a solution to the problem—a relatively simple key





## BLUEGRASS REVIEWS

mers weren't getting paid for their work, they stopped writing programs. Most of the small software firms put out of business were very similar to small record labels. The majority of lost programs have been game, educational and the simpler business software. I'm not sure the loss has hurt us that much.

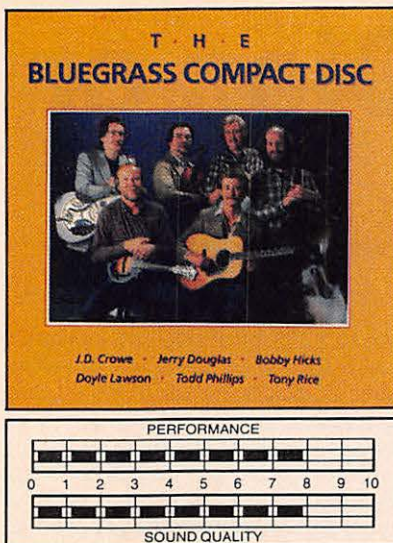
*In case  
you've been  
driving around in  
a turnip truck, the  
DAT era has  
arrived.*

Should the worst happen and record royalties go the way of software royalties, I'm not sure the public would be much worse off than they are because of lost software. If rock groups, say, were to have their income drop 90 percent, we might end up having fewer, but better groups.

The plan to avoid being able to record at 44.1 kHz doesn't seem practical, either. How long will DAT systems be on the market before we see 44.1 kHz "black boxes" from numerous companies? When cable operators started encoding satellite video signals, they believed no one could break the code. Now I read that it has been broken. No, I don't think there's any practical system of protection that will defeat our rapidly developing technology.

In the long run it's quite possible DAT will shoulder out CDs. DAT tapes are two hours long, can be made cheaper, and are smaller and less fragile. We'll certainly be seeing car DAT players with multi-cassette changers. We'll see players that will zip back and forth to play any programmed selections in the order we want them. But don't panic and stop buying CDs. It's not going to happen for a few years yet. ☐

*Wayne Green is the publisher/editor of Digital Audio and 73. He also founded Byte, 80 Micro, inCider, RUN, and a bunch of other stuff.*



### Various Artists:

#### The Bluegrass Compact Disc

Producer: Anthony Rice

Engineer: Billy Wolf

Rounder Records CD 0210 (AAD) (86)

Total disc time: 60:13

Stand back boys, the dam done burst! Here are twenty old bluegrass tunes written by masters such as Lester Flatt and Bill Monroe, who helped popularize bluegrass in the 1950s. If you don't get excited over this CD, you're un-American. Great stuff.

The quality is surprisingly good, considering this is an AAD disc. Yes, a true fanatic will be able to hear a little tape noise at the end of some songs. But because bluegrass is continuous music with no pauses, there's no way to hear the hiss until the end. Still, I hope they'll get these boys together again in a state-of-the-art studio and do it DDD.

Bluegrass is a subdivision of country music, usually played with a banjo, mandolin, guitar, fiddle, and bass. They don't use flanging or other effects, just straight miking. So the strings are clear and crisp and the stereo effect is strong, especially on headphones. The mandolin is right there in you left ear, the fiddle in your right, and the singers are in the middle with the banjo, guitar, and bass.

There's only one track without a vocal on this CD. I'm hoping I'll find some more Rounder discs—straight fiddle tunes. And how soon will "Rocky Top" be along? More... more!

One warning: As soon as someone comes out with Cajun music, you're all going to hear from me again. I can't wait until a label gives us Doug Kershaw.



### Ricky Skaggs:

#### Family & Friends

Engineer: Pat McMakin

Mixing: Ricky Skaggs

Rounder Records CD 0151 (AAD) (86)

Total disc time: 30:10

Now I'll have to stop griping about never seeing a bluegrass CD. While visiting the Compact Disc Center in Dallas, I found a bluegrass devotee who led me to a couple of new bluegrass discs. Hooray... sort of.

The Skaggs CD is one of the world's shortest, a musical ripoff! Tsk, tsk, Rounder Records. But some first-rate bluegrass would quiet my gripes over the less than half-filled disc. The slightly good news is there are a few nice pieces on the disc. The bad news is how few out of the 10 shorties are solid bluegrass.

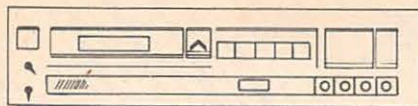
On the plus is the recording quality. Nice! The liner notes said this is an AAD, though I didn't notice the usual tape hiss that mars many AADs. The instruments are clean and clear—beautiful.

The second track is an old Roy Acuff tune by Fred Rose, "We Live in Two Different Worlds." Golly, that took me back—I've got it on an old 78 from around 1945. I got hung up on Acuff, Ernest Tubbs, and Rosalie Allen in particular. Why I went so hard for country music and so little for big band popular music, I don't know. It was the same way with the guy who got me into classical music, so I suspect there's some common thread.

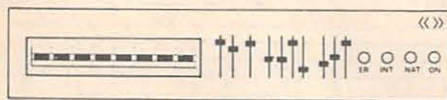
In any case, whatever I say about this disc will just be carping. The fact is that there are very few bluegrass CDs. We fans can't be picky.

**Wayne Green**

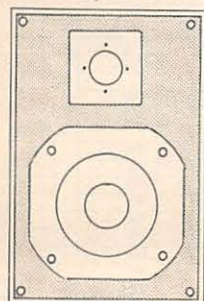




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AMPLIFIERS p. 102



SPEAKERS p. 104



HEADPHONES p. 108

# THE DIGITALLY READY BUYER'S GUIDE

compiled by Andrew Taylor

**Y**ou've probably had the following mind-boggling experience more than once. You walk into a crowded stereo shop, high-volume electronics discounter, or department store. There's not a salesperson in sight, so you're on your own in dealing with the thicket of CD players to the right of you, the dozens of speakers to the left, the arsenal of amplifiers stacked to the ceiling, and the phalanx of headphones looming in the next aisle.

Obviously, you're in trouble. You need some basic

information before you even consider making a purchase—a comprehensive directory of comparative prices and features that will help you reach an intelligent buying decision.

That's the purpose of this Buyer's Guide feature, which will appear every month in Digital Audio with updated data and listings of the latest products on the market. Just like the Boy Scouts, our editors want you to Be Prepared.

## UNTANGLING THE TECHNICAL TERMINOLOGY

**AC**—An abbreviation for Alternating Current; an electrical signal whose voltage fluctuates between positive and negative values. The current that comes from wall sockets to power your stereo is an AC waveform. The audio waveforms that pass through your stereo are also AC waveforms.

**Acoustic Suspension**—A loudspeaker enclosure design that installs the drivers in a sealed, unvented cabinet (see

Insider Digital, DA 2/87).

**Amplitude**—A measurement of the strength of an electrical signal. In audio waveforms, amplitude is usually expressed as a ratio referenced to some known level, and measured in decibels (dB).

**Bass Reflex or Vented Box**—A loudspeaker enclosure design that uses a box enclosing the drivers with a hole or "port" in its front or back panel (see

Insider Digital, DA 2/87).

**Capacitor**—A passive device that stores an electrical charge, and blocks the continuous flow of direct current (DC).

**Channel Separation**—In a stereo device, the ratio (expressed in decibels, or dB) of unwanted left channel signal present in the right channel, and of right in the left. The higher the separation rating, the better.

*Continued on p. 100*



# Want more INFORMATION on the products listed in the BUYER'S GUIDE?

Many of these manufacturers have pictures, brochures, and product literature they will be glad to send you free of charge.

And if your nearest dealer is not advertised in the guide, the manufacturer will be pleased to send you his name.

For additional information, call Digital Audio toll free (800) 722-7785 and ask for Suzanne at extension 535. She'll be happy to take your name and address and contact whatever manufacturer you wish.

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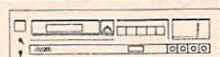
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## CD PLAYERS



MANUFACTURER MODEL

MANUFACTURER	MODEL	FREQUENCY RESPONSE	DYNAMIC RANGE (dB)	SIGNAL TO NOISE RATIO (dB)	CHANNEL SEPARATION (dB)	FILTER TYPE (Analog or Digital)	OVERSAMPLING	NO. OF D/A CONVERTERS	NO. OF PROGRAMMABLE SELECTIONS
SAMPO	CDP-501	20 Hz-18 kHz	96	96	86	X	X	X	16
SANYO	CD 700	5 Hz-20 kHz	96	96	92	A	No	2	99
TOSHIBA	R-99 port.	5 Hz-20 kHz, +0.5, -1.5 dB	84	84	75	A	X	X	16
SANYO	CP 10 port.	20 Hz-20 kHz	90	88	80	A	No	1	16
QUASAR	CD8936 port.	4 Hz-20 kHz, +0.5, -1 dB	90	90	90	A	No	1	none
YAMAHA	CD-X3	5 Hz-20 kHz, +0.5, -1 dB	95	98	90	D	Yes, 2x	1	9
CITIZEN	DP-120	20 Hz-20 kHz	90	X	80	X	No	X	16
FISHER	AD-922B	X	X	90	80	D	No	X	16
FISHER	AD-924B	X	X	90	80	D	No	X	16
SANYO	CP 710	5 Hz-20 kHz	96	96	92	A	No	2	99
SHARP	DX-110 BK	5 Hz-20 kHz, +0.5 dB	96	97	90	D	No	1	none
TOSHIBA	XR-30	5 Hz-20 kHz	96	X	90	A	X	X	16
QUASAR	CD8956	4 Hz-20 kHz, +0.5, -1 dB	96	100	100	D	Yes, 2x	1	20
GOLDSTAR	GCD-616	5 Hz-20 kHz, +1.5 dB	90	85	85	D	X	1	9
KENWOOD	DP-750	5 Hz-20 Hz, +0.5 dB	96	X	90	A	X	X	16
YAMAHA	CD-300B	5 Hz-20 kHz, +0.5, -1.5 dB	95	98	90	D	Yes, 2x	1	9
SHARP	DX-610 BK	5 Hz-20 kHz, +0.5 dB	96	97	90	D	No	1	none
REALISTIC	CD 1400	5 Hz-20 kHz, +0.5, -1 dB	92	90	90	A	No	X	15
SONY	D-170 port.	20 Hz-20 kHz, +1, -3 dB	90	85	85	A	No	1	16
SYLVANIA	CD1150	2 Hz-20 kHz, +0.3 dB	90	90	90	D	Yes, 4x	1	20
PANASONIC	SL-P 3620	4 Hz-20 kHz, +0.3 dB	96	96	100	D	No	1	20
SONY	D-5 port.	20 Hz-20 kHz, +1, -3 dB	90	85	85	A	No	1	none
SONY	CDP-25	2 Hz-20 kHz, +0.5 dB	93	93	90	A	No	1	16
JVC	XL-V220BK	5 Hz-20 kHz	95	93	90	D	Yes, 2x	X	15
MAGNAVOX	CD8460	2 Hz-20 kHz, +0.3 dB	100	100	94	D	X	X	20
MAGNAVOX	CD8465	2 Hz-20 kHz, +0.3 dB	100	100	94	D	X	X	20
SYLVANIA	CD1460	2 Hz-20 kHz, +0.3 dB	100	100	96	D	Yes, 4x	2	20
MITSUBISHI	DP-109	5 Hz-20 kHz, +0.5 dB	95	95	90	A	No	X	16
REALISTIC	CD 3000 port.	5 Hz-20 kHz, +0.5, -0.5 dB	73	X	73	A	Yes, 4x	X	16
ADC	CD-100X	10 Hz-20 kHz, +0.8 dB	96	95	85	A	No	1	16
EMERSON	CD160	5 Hz-20 kHz, +0.5, -1 dB	95	95	92	X	No	2	15
FISHER	AD-815B	X	X	90	80	X	No	X	16
H.H. SCOTT	950 DA	5 Hz-20 kHz, +0.5 dB	95	95	92	A	No	1	15
HITACHI	DA-6000	5 Hz-20 kHz, +0.5, -1 dB	95	95	90	A	No	1	15
PANASONIC	SL-NP10 port.	4 Hz-20 kHz, +0.5, -1 dB	96	96	90	D	Yes, 2x	1	15
PIONEER	PD-6030	4 Hz-20 kHz, +0.5 dB	95	97	92	A	No	X	24
SHARP	DX-620 BK	5 Hz-20 kHz, +0.5 dB	96	97	90	D	No	1	9
SONY	D-7 port.	20 Hz-20 kHz, -1.7 dB	90	85	85	A	No	1	16
TOSHIBA	XR-P9 port.	5 Hz-20 kHz, +0.5, -1.5 dB	84	X	75	A	X	1	16
TOSHIBA	XR-35	20 Hz-20 kHz, +0.5 dB	96	96	90	A	X	X	16

**\$300-  
\$400**

## CD PLAYERS

MANUFACTURER	MODEL	FREQUENCY RESPONSE	DYNAMIC RANGE (dB)	SIGNAL TO NOISE RATIO (dB)	CHANNEL SEPARATION (dB)	FILTER TYPE (Analog or Digital)	OVERSAMPLING	NO. OF D/A CONVERTERS	NO. OF PROGRAMMABLE SELECTIONS
ADC	16/1	20 Hz-20 kHz, +0.5, -1 dB	96	95	85	A	No	1	16
ONKYO	DX-120	5 Hz-20 kHz	96	93	87	D	Yes, 2x	1	16
SANSUI	CD-V350	5 Hz-20 kHz, +0.5 dB	96	100	90	D	No	X	16
SONY	CDP-77F port.	2 Hz-20 kHz, +0.5 dB	90	90	90	A	No	1	16
TECHNICS	SL-PJ11	4 Hz-20 kHz, +0.5 dB	96	96	100	D	Yes, 2x	1	15
TECHNICS	SL-XP5 port.	4 Hz-10 kHz, +0.5, -1 dB	90	90	90	D	Yes, 2x	1	18
KENWOOD	DP-850	5 Hz-20 Hz, +1 dB	92	X	90	A	No	X	16
YAMAHA	CD-400B	5 Hz-20 kHz, +0.5, -1.5 dB	95	98	90	D	Yes, 2x	1	9
JVC	XL-V330BK	5 Hz-20 kHz	95	93	90	D	Yes, 2x	X	15
TECHNICS	SL-P110	4 Hz-20 kHz, +0.5 dB	92	96	96	D	Yes, 2x	1	20
MAGNAVOX	CD8560	2 Hz-20 kHz, +0.3 dB	100	100	94	D	X	X	20
SYLVANIA	CD1560	2 Hz-20 kHz, +0.3 dB	100	100	96	D	Yes, 4x	2	20
MARANTZ	CD-152	5 Hz-20 kHz	96	96	90	D	Yes, 4x	2	16
SONY	D-55 port.	20 Hz-20 kHz, -1.7 dB	90	85	85	A	No	1	16
DENON	DCD-500	5 Hz-20 kHz, +0.5 dB	95	95	90	A	No	1	15
MITSUBISHI	DP-209R	5 Hz-20 kHz, +0.5 dB	95	95	90	A	No	X	16
SONY	CDP-45	2 Hz-20 kHz, +0.5 dB	95	95	90	A	No	1	20
AKAI	CD-A30	5 Hz-20 kHz, +0.5 dB	90	90	86	A	No	1	36
AKAI	CD-M515	5 Hz-20 kHz, +0.5 dB	90	90	86	A	No	1	36
NAD	5330	5 Hz-20 kHz, +0.5 dB	X	98	90	A	X	1	none
TEAC	PD-100	8 Hz-20 kHz	92	92	84	D	Yes, 2x	1	16
EMERSON	CD170R	5 Hz-20 kHz	95	95	92	X	No	2	15
H.H. SCOTT	960 DA	5 Hz-20 kHz, +0.5 dB	95	95	92	A	No	1	15
HITACHI	DA-500	5 Hz-20 kHz, +0.5, -1 dB	95	95	92	A	No	1	15
HITACHI	DA-6001	5 Hz-20 kHz, +0.5, -1 dB	95	95	90	A	No	1	15
HITACHI	DA-P100	5 Hz-20 kHz	90	X	85	A	No	1	none
PANASONIC	SL-NP20 port.	4 Hz-20 kHz, +0.5, -1 dB	96	96	90	D	X	1	20
PIONEER	PD-6030	4 Hz-20 kHz, +0.5 dB	95	97	92	A	No	X	24
AKAI	CD-A3X	5 Hz-20 kHz, +1 dB	90	90	86	A	No	1	36
SONY	D-77 port.	20 Hz-20 kHz, -1.7 dB	90	85	85	A	No	1	16
JVC	XL-V440BK	5 Hz-20 kHz	95	93	90	D	Yes, 2x	X	15
ADC	16/2R	20 Hz-20 kHz, +0.5, -1 dB	96	95	85	A	No	1	16
SANSUI	CD-V550R	5 Hz-20 kHz, +0.5 dB	96	100	90	D	No	X	16
TECHNICS	SL-XP8 port.	4 Hz-10 kHz, +0.5, -1 dB	90	90	90	D	Yes, 2x	1	18
TECHNICS	SL-P310	4 Hz-20 kHz, +0.5 dB	94	96	96	D	Yes, 2x	1	20
ROTEL	RCD850	5 Hz-20 kHz, +0.5, -0.5 dB	95	98	90	A	Yes, 2x	2	9
SHURE	SV40	5 Hz-20 kHz, +0.3 dB	98	100	85	A	No	X	15
SHURE	D5000	5 Hz-20 kHz, +0.3 dB	93	100	85	D	Yes, 2x	X	15
TEAC	PD-200	5 Hz-20 kHz, +1 dB	92	92	85	D	No	1	16
YAMAHA	CD-500B	5 Hz-20 kHz, +0.5, -1.5 dB	96	100	92	D	Yes, 2x	1	9
AUDIO TECHNICA	AT-CD20	4 Hz-20 kHz, +0.5, -1 dB	96	100	92	D	Yes, 2x	1	9
HITACHI	DA-405	5 Hz-20 kHz, +0.5, -1 dB	95	95	92	A	No	1	15
HITACHI	DA-501	5 Hz-20 kHz	95	95	92	A	No	1	15
MARANTZ	CD-50	5 Hz-20 kHz	96	96	90	D	Yes, 2x	2	16
SHERWOOD	CDP-300R	2 Hz-20 kHz, +0.3 dB	96	96	94	D	Yes, 4x	X	20
DENON	DCD-700	5 Hz-20 kHz, +0.5 dB	95	95	90	A	No	1	15



AUDIBLE FAST SEARCH				INDEXING				REMOTE CONTROL				HEADPHONE JACK				DIMENSIONS (inches)				WEIGHT (lbs.)				NOTES				SUGGESTED RETAIL PRICE			
Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	13.8 x 3.1 x 11.6	7.9	Black Finish													199.00
Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	16.8 x 3.1 x 10.8	7.2	1-beam pickup													198.95
No	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	9.8 x 1.8 x 5.1	2.9	Portable													199.95
Yes	No	No	No	Yes, 2	No	No	No	No	No	No	No	No	No	No	No	7.25 x 1.5 x 5	9.1	Portable, DA 7/86, 2.5 stars													229.95
No	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	4.9 x 1.25 x 4.9	1.6	Portable, 1-beam pickup													239.95
Yes	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	13.3 x 3.6 x 11.25	7.7	3-second track access													249.00
No	No	No	No	Yes, 2	No	No	No	No	No	No	No	No	No	No	No	5 x 1.2 x 7.3	1.9	Portable													249.95
No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	17.3 x 3.4 x 11.3	9	Smaller version of AD-924B													249.95
No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	17.3 x 3.4 x 11.3	9	Coordinates with Fisher rack													249.95
Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	16.8 x 3 x 10.8	7.2	1-beam pickup													249.95
Yes	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	13.3 x 1.1 x 11.75	10.4	1-beam pickup													249.95
No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	16.5 x 3.2 x 12.1	9	Available w/ remote as XR-35													249.95
Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	16.9 x 3.1 x 10.5	X	Black finish													249.95
Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	16.9 x 3 x 12	11	Goldstar's first CD Player													250.00
Yes	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	16.5 x 3.1 x 12.2	9.7	Accurate/Optimum Servo Control													255.00
Yes	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	13.3 x 3.6 x 11.25	7.7	Mid-size chassis													259.00
Yes	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	17.3 x 1.1 x 11.75	11.7	1-beam pickup													259.95
Yes	Yes	No	X	No	No	No	No	No	No	No	No	No	No	No	No	14.5 x 2.75 x 10.4	6.5	Realistic's top-of-the-line													260.00
Yes	No	No	Yes, var	No	No	No	No	No	No	No	No	No	No	No	No	7.5 x 2.25 x 9	10	Two-speed music search													265.00
Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	12.5 x 3.5 x 11.75	7	Three-speed audible search													269.00
Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	16.8 x 3 x 10.3	9.3	Shock-resistant construction													269.95
Yes	No	No	Yes, var	No	No	No	No	No	No	No	No	No	No	No	No	5 x 1.5 x 5.25	1.4	Portable, DA 1/85													269.95
Yes	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	17 x 2.8 x 11.2	8.8	4-way repeat feature													270.00
No	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	17.2 x 3.31 x 11.4	7.3	Black finish													275.00
Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	16.5 x 3.5 x 11.75	8	Subcode output jack													279.00
Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	16.5 x 3.5 x 11.75	8	Subcode output jack													279.00
Yes	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	16.5 x 3.5 x 11.75	8	Subcode output jack													279.00
No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	16.6 x 2.5 x 11	11	Black finish													280.00
Yes	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	4.4 x 2.75 x 4.4	1.2	Portable, 1-beam pickup													280.00
No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	13.4 x 3.2 x 11.5	8	Black finish													299.95
Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	17.1 x 2.8 x 10.4	7.25	DA 11/86, 1-star rating													299.95
No	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	17.3 x 3.4 x 11.3	9	1 pickup beam													299.95
Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	17.2 x 3.7 x 11	10.8	Scott's low-price player													299.95
Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	14.8 x 2.8 x 10.5	9	4-way repeat feature													299.95
Yes	Yes	No	Yes, var	Yes	No	No	No	No	No	No	No	No	No	No	No	4.96 x 0.87 x 4.96	X	Portable incl. battery pack													299.95
Yes	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	16.5 x 3.25 x 11.4	11.8	Optional remote for \$50													299.95
Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	17.3 x 1.1 x 11.75	9.3	1-beam pickup													299.95
Yes	No	No	Yes, var	Yes	No	No	No	No	No	No	No	No	No	No	No	5 x 1.3 x 5	1.5	Portable, DA 7/86, 3 stars													299.95
Yes	No	Yes	Yes, var	Yes	No	No	No	No	No	No	No	No	No	No	No	4.9 x 1.5 x 7.1	1.1	Portable, DA 7/86, 2.5 stars													299.95
No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	16.5 x 3.2 x 12.1	9	Same as XR-30 w/ remote													299.95

No	Yes	No	No	No	17 x 3.3 x 12	8.5	Powerful error processing		300.00
Yes	No	No	No	No	17.1 x 3.6 x 13.75	10	"Common mode noise" filters		300.00
Yes	No	No	Yes, var	No	16.9 x 3.2 x 12.2	8.8	Sansui's lowest price player		300.00
Yes	Yes	Opt	Yes, var	No	8.5 x 3.25 x 12	9	Portable		300.00
Yes	Yes	No	No	No	12.4 x 2.9 x 10.5	7.9	1-beam pickup		300.00
Yes	No	No	Yes, var	No	4.9 x 0.9 x 4.9	X	Portable, 1-beam pickup		300.00
Yes	No	No	Yes, var	No	16.5 x 2.9 x 12.25	9.7	Designed for vibration resistance		315.00
Yes	Yes	No	Yes	No	17.1 x 3.75 x 11.25	9.25	3-way music search		319.00
Yes	X	Yes	Yes, var	No	17.2 x 3.31 x 11.4	7.3	Black finish		320.00
Yes	No	No	No	No	16.9 x 3.1 x 9.5	8	1-beam pickup		320.00
Yes	No	Yes	No	No	16.5 x 3.5 x 11.75	8	Subcode output jack		329.00
Yes	Yes	Yes	No	No	16.5 x 3.5 x 11.75	8	Subcode output jack		329.00
Yes	No	No	No	No	16.5 x 4 x 11.6	9.5	Black finish		329.95
Yes	No	No	Yes, var	No	5 x 1.3 x 5	1.5	Portable w/ FM tuner		329.95
Yes	No	No	Yes	No	17.3 x 3.6 x 12.2	7.9	Lowest-price Denon player		330.00
No	Yes	Yes	No	No	16.6 x 2.5 x 11	11	Same as DP-109, w/ remote		330.00
Yes	Yes	Opt	No	No	17 x 3.25 x 11.25	11	5-way repeat feature		330.00
Yes	Yes	No	No	No	17.3 x 3.1 x 10.2	7.7	Same as CD-A3X w/out headphone jack		340.00
Yes	Yes	No	No	No	13.7 x 3.3 x 10.2	7	Mid-sized chassis		340.00
Yes	No	No	No	No	16.5 x 3.3 x 12.2	X	NAD's lowest-price player		348.00
Yes	Yes	No	No	No	17.1 x 3 x 10.75	7.75	Multi-repeat function		349.00
Yes	Yes	Yes	No	No	17.1 x 2.8 x 10.4	7.25	Costs \$299.95 w/out remote		349.95
Yes	Yes	Yes	No	No	17.2 x 3.7 x 11	10.8	Like 950 DA w/ added features		349.95
Yes	Yes	No	No	No	17.1 x 3.25 x 10.3	10	See DA-501 for remote option		349.95
Yes	Yes	Yes	No	No	14.5 x 2.8 x 10.3	9	Compact size		349.95
Yes	No	No	Yes	No	7.5 x 1.5 x 6.4	2.5	DA 7/86, 2-star rating		349.95
Yes	Yes	Yes	Yes, var	No	4.96 x 1.1 x 4.96	X	Portable w/ batt. pack, AM/FM		349.95
Yes	No	Yes	Yes	No	16.5 x 3.25 x 11.4	11.8	Same as PD-5030, w/ remote		349.95
Yes	Yes	No	Yes	No	17.3 x 3.1 x 10.2	7.7	Same as CD-A30 w/ headphone jack		350.00
Yes	No	No	Yes, var	No	5 x 1.3 x 5	1.5	Portable w/ AM/FM tuner		359.95
Yes	X	Yes	Yes, var	No	17.2 x 3.31 x 11.4	7.3	Black finish		360.00
No	Yes	Yes	No	No	17 x 3.3 x 12	8.5	Same as 16/1 w/ remote		370.00
Yes	No	Yes	Yes, var	No	16.9 x 3.2 x 12.2	8.8	Same as CD-V350, w/ remote		370.00
Yes	No	No	Yes, var	No	4.9 x 1.1 x 4.9	X	Portable w/ AM/FM tuner, 1 beam		370.00
Yes	No	Yes	Yes	No	16.9 x 3.1 x 9.5	8	1-beam pickup		375.00
No	Yes	No	No	No	17.1 x 3.6 x 11.5	9.25	Black finish		399.00
Yes	No	Yes	Yes, var	No	16.9 x 2.9 x 10.6	9.6	"Dual Break Point" filtering		399.00
Yes	Yes	Yes	No	No	16.9 x 3.9 x 10	11	Black finish		399.00
Yes	No	No	No	No	17.1 x 3.1 x 11.75	8.75	Slim, compact design		399.00
Yes	Yes	Yes	Yes, var	No	17.1 x 3.7 x 11.25	10.5	3-way music search		399.00
Yes	Yes	Yes	Yes, var	No	17.1 x 3.7 x 11.4	9.9	Black finish		399.95
Yes	Yes	Yes	Yes	Yes	17.1 x 2.8 x 10.3	10	Remote w/ volume control		399.95
Yes	Yes	Yes	Yes, var	No	17.1 x 3.25 x 10.3	10	Same as DA-500 w/ remote		399.95
No	No	Yes	No	No	16.5 x 3 x 10.8	7.7	Costs \$329.95 w/out remote		399.95
No	Yes	Yes	No	No	17.4 x 3.25 x 9.75	X	1-beam pickup		399.95
Yes	No	No	Yes	Yes, var	17.3 x 3.6 x 12.2	7.9	Same as CDC-500 w/remote and hdphn		400.00



## ADS CD4

Continued from p. 34

shielded against the effects of radio interference, and the power supply transformer is shielded against generating the same. Other nice touches include a toroidal choke for the AC line cord and AC convenience sockets, and a massive heat sink that cools the power supply voltage regulators. The quality-minded analog section uses tight-tolerance resistors, high-speed op-amps, and polystyrene capacitors.

*Finally, I congratulate ADS on the outstanding packaging used in its shipping carton; it is among the best I've seen.*

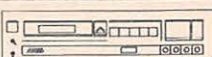
On the whole, the CD4's internal design is similar to that of CD3, but numerous small changes are apparent. For instance, the CD4 uses Burr Brown D/A converters where the CD3 uses Sony chips; the CD4 has a brush type spindle motor and the CD3 has a brushless design; and the CD4 consolidates its electronics onto a single printed circuit board versus the CD3's three boards. And of course the CD3 still boasts added front panel functions.

Finally, I congratulate ADS on the outstanding packaging used in its shipping carton; it is among the best I have seen. All too often, manufacturers make a nice product, then ship it inadequately protected. I appreciate it when a manufacturer is intent on minimizing shipping damage—and thus potential customer aggravation, as well.

In the listening room, the CD4 maintained its thoroughly high-class presentation. Although deadline pressures prevented me from listening as long as I would have liked—and that would be long indeed—I was satisfied with the refined quality of this player. A two-times oversampling design that incorporates a single master clock with a well-engineered output stage, the CD4 yields fabulous sonics.

**\$400-  
\$899**

## CD PLAYERS



MANUFACTURER	MODEL	FREQUENCY RESPONSE	DYNAMIC RANGE (dB)	SIGNAL TO NOISE RATIO (dB)	CHANNEL SEPARATION (dB)	FILTER TYPE (Analog or Digital)	OVERSAMPLING	NO. OF D/A CONVERTERS	NO. OF PROGRAMMABLE SELECTIONS
ONKYO	DX-220	5 Hz-20 kHz	96	93	87	D	Yes, 2x	1	16
SANSUI	CD-E750	5 Hz-20 kHz, +0.5 dB	95	100	90	D	X	X	8
SONY	CDP-55	2 Hz-20 kHz, +0.3 dB	96	96	93	D	Yes, 2x	X	20
MAGNAVOX	CDB650	2 Hz-20 kHz, +0.3 dB	100	100	94	D	Yes, 4x	2	20
NEC	CD-500E	5 Hz-20 kHz, +0.5 dB	90	96	88	A	X	1	15
NEC	CD-650E	5 Hz-20 kHz, +0.5, -1 dB	90	96	88	D	Yes, 2x	2	15
TEAC	PD-400	8 Hz-20 kHz	95	95	94	D	Yes, 2x	1	16
ADCOM	GCD-200	5 Hz-20 kHz, +0.5 dB	96	98	90	A	No	X	15
MITSUBISHI	DP-309	5 Hz-20 kHz, +0.5 dB	94	98	90	A	No	X	30
AKAI	CD-A70	5 Hz-20 kHz, +0.5 dB	95	95	90	D	Yes, 2x	1	99
LUXMAN	D-100	5 Hz-20 kHz +0, -0.5 dB	90	91	85	A	No	1	16
NAD	5335	5 Hz-20 kHz, +0.5 dB	X	98	90	A	Yes	2	8
NAKAMICHI	OMS-2A	5 Hz-20 kHz, +0.5 dB	92	96	90	D	Yes, 2x	1	15
ADCOM	GCD-300	5 Hz-20 kHz, +0.5 dB	96	98	90	A	No	X	15
PARASOUND	CDD 940	5 Hz-20 kHz, +0.5 dB	100	95	90	D	No	1	none
PIONEER	PD-M6	4 Hz-20 kHz +0.5, -1 dB	94	98	92	A	No	1	32
SHERWOOD	CDP-310R	2 Hz-20 kHz, +0.3 dB	96	96	94	D	Yes, 4x	X	20
TOSHIBA	XR-V22	20 Hz-20 kHz, +1 dB	96	96	90	A	No	1	30
MITSUBISHI	DP-409R	5 Hz-20 kHz, +0.5 dB	94	98	90	A	No	X	30
SONY	CDP-203	2 Hz-20 kHz, +0.3 dB	96	96	93	D	Yes, 2x	1	20
TECHNICS	SL-P500	4 Hz-20 kHz, +0.5 dB	96	102	110	D	Yes, 2x	1	20
KENWOOD	DP-1000	4 Hz-20 kHz, +0.5 dB	95	X	95	A	No	1	16
PIONEER	PD-9010X	2 Hz-20 kHz, +0.3 dB	96	96	90	D	Yes, 2x	1	32
CARVER	DTL-50	5 Hz-20 kHz, +0.5 dB	94	95	84	D	Yes, 2x	1	29
PROTON	830R	10 Hz-20 kHz, +0.3 dB	95	98	90	A	Yes, 4x	X	20
DENON	DCD-1300	5 Hz-20 kHz, +0.3 dB	95	96	90	D	Yes, 2x	1	20
KYOCERA	DA-610CX	5 Hz-20 kHz, +0.5 dB	90	90	90	A	No	2	16
SONY	CDP-302II	2 Hz-20 kHz, +0.3 dB	96	96	95	D	Yes, 2x	1	16
HARMON/KARDON	HD300	4 Hz-20 kHz, +0.5 dB	94	100	83	D	Yes, 2x	1	15
LUXMAN	D-404	5 Hz-20 kHz +0, -0.5 dB	96	96	90	A	No	1	8
ONKYO	DX-320	2 Hz-20 kHz	96	96	83	D	Yes, 2x	1	16
DBX	DX3	20 Hz-20 kHz, +0.5, -1 dB	96	100	90	D	Yes, 2x	1	9
NEC	CD-607	5 Hz-20 kHz, +0.5 dB	90	95	90	D	Yes, 2x	1	15
YAMAHA	CD-700	4 Hz-20 kHz, +0.5, -1.5 dB	96	100	92	D	Yes, 2x	1	12
HITACHI	CDD 4	5 Hz-20 kHz	94	98	92	A	No	1	32
JVC	XL-M700BK	5 Hz-20 kHz	95	93	90	D	Yes, 2x	X	32
LUXMAN	D-102	5 Hz-20 kHz +0, -0.5 dB	91	91	88	A	No	1	16
SONY	CDP-520ESII	2 Hz-20 kHz, +0.3 dB	96	96	95	D	Yes, 2x	1	16
SHURE	D6000	5 Hz-20 kHz, +0.25 dB	102	102	85	D	Yes, 2x	2	15
MARANTZ	CD-74	4 Hz-20 kHz, +0.1 dB	90	90	90	D	Yes, 4x	2	24
DENON	DCD-1500	5 Hz-20 kHz, +0.3 dB	96	96	95	D	Yes, 2x	2	20
CARVER	DTL-100	5 Hz-20 kHz, +0.3 dB	96	96	86	D	Yes, 2x	1	9
SONOGRAPHE	SD 1	5 Hz-15 kHz, +0.25 dB	94	94	90	D	Yes, 4x	2	20
BANG & OLUFSEN	Beogram CDX	3 Hz-20 kHz, +0.3 dB	96	96	94	D	Yes, 4x	2	40
CARVER	DTL-200	5 Hz-20 kHz, +0.1 dB	100	100	X	D	Yes, 2x	1	29
MISSION	PCM 4000	20 Hz-20 kHz	96	96	90	D	Yes, 4x	2	20
NAKAMICHI	OMS-3A	5 Hz-20 kHz, +0.5 dB	92	95	90	D	Yes, 2x	1	15
TEAC	ZD-700	5 Hz-20 kHz, +0.3 dB	96	96	94	D	No	1	16
YAMAHA	CD-1000	2 Hz-20 kHz, +0.5 dB	97	102	95	D	Yes, 2x	1	12
NIKKO AUDIO	NCD-200R	5 Hz-20 kHz, +0.5 dB	98	X	90	D	X	X	9
NEC	CD-705	5 Hz-20 kHz, +0.5 dB	90	95	90	D	Yes, 2x	1	15
KINERGETICS	KCD-20 Gold	2 Hz-20 kHz, +0.5 dB	100	100	94	D	Yes, 4x	2	20
YAMAHA	CD-2000	2 Hz-20 kHz, +0.3 dB	97	102	95	D	Yes, 2x	2	12
HITACHI	DA-005	5 Hz-20 kHz, +0.3 dB	96	97	95	D	Yes, 2x	1	15
SONY	CDP-C10	2 Hz-20 kHz, +0.3 dB	96	96	95	D	Yes, 2x	1	20
KINERGETICS	KCDR-20	2 Hz-20 kHz, +0.5 dB	100	100	94	D	Yes, 4x	2	20
REVOX	B225	20 Hz-20 kHz, -0.6 dB	96	100	90	D	Yes, 4x	2	19
YAMAHA	CD-2000M	2 Hz-20 kHz, +0.3 dB	97	102	96	D	Yes, 2x	2	12

**\$900  
AND UP**

## CD PLAYERS

MANUFACTURER	MODEL	FREQUENCY RESPONSE	DYNAMIC RANGE (dB)	SIGNAL TO NOISE RATIO (dB)	CHANNEL SEPARATION (dB)	FILTER TYPE (Analog or Digital)	OVERSAMPLING	NO. OF D/A CONVERTERS	NO. OF PROGRAMMABLE SELECTIONS
ADS	Atelier CD4	20 Hz-20 kHz +0.25 dB	96	102	86	D	Yes, 2x	2	16
PIONEER	CLD-909	4 Hz-20 kHz +0.5, -1 dB	95	98	92	X	X	X	10
KYOCERA	D/A-810	5 Hz-20 kHz, +0.5 dB	90	95	90	D	Yes, 4x	2	24
TEAC	ZD-3000	5 Hz-20 kHz, +0.3 dB	96	96	95	D	Yes, 2x	2	20
NAKAMICHI	OMS-4A	5 Hz-20 kHz, +0.5 dB	94	97	93	D	Yes, 2x	2	15
BANG & OLUFSEN	CD 50	4 Hz-20 kHz, +0.3 dB	96	95	94	D	Yes, 2x	1	99
MISSION	PCM 7000R	20 Hz-20 kHz	96	96	90	D	Yes, 4x	2	20
TEAC	AD-7	5 Hz-20 kHz	96	96	90	D	No	1	15
JVC	XL-V1100BK	2 Hz-20 kHz	96	98	95	D	Yes, 4x	X	15
SONY	CDP-620ESII	2 Hz-20 kHz, +0.3 dB	96	96	95	D	Yes, 2x	2	20
TECHNICS	SL-P1200	4 Hz-20 kHz, +0.2 dB	96	103	110	D	Yes, 2x	2	20
TEAC	ZD-5000	5 Hz-20 kHz, +0.3 dB	96	96	95	D	Yes, 2x	2	20
REVOX	B225	20 Hz-20 kHz, +0, -0.6 dB	96	96	90	D	Yes, 2x	X	19
DISTECH	LS-1 Mark 2	20 Hz-20 kHz, +0.3 dB	110	103	103	D	Yes, 4x	2	20
ADS	Atelier CD3	20 Hz-20 kHz +0.25 dB	96	102	86	D	Yes, 2x	2	30
LUXMAN	D-408	5 Hz-20 kHz +0, -0.5 dB	96	96	90	A	No	1	20
SONY	CDP-650ESII	2 Hz-20 kHz, +0.3 dB	96	96	95	D	Yes, 2x	2	20
NAKAMICHI	OMS-5AII	5 Hz-20 kHz, +0.5 dB	96	102	100	D	Yes, 4x	2	none
MCINTOSH	MCD 7000	2 Hz-20 kHz, +0.3 dB	96	96	94	D	Yes, 4x	2	20
LUXMAN	D-109	5 Hz-20 kHz +0, -0.5 dB	96	96	95	A	No	1	20
LUXMAN	D-03	5 Hz-20 kHz +0, -0.5 dB	97	97	93	A	No	1	20
MERIDIAN	207 PRO	20 Hz-20 kHz, +0.3 dB	X	X	X	D	Yes, 4x	2	99
KYOCERA	DA-910	5 Hz-20 kHz, +0.5 dB	90	95	90	D	Yes, 4x	2	24
NAKAMICHI	OMS-7AII	5 Hz-20 kHz, +0.5 dB	96	102	100	D	Yes, 4x	2	24
CALIFORNIA AUDIO	Tempest	5 Hz-20 kHz, -0.5 dB	X	105	96	A	Yes, 4x	2	20
CAMBRIDGE AUDIO	CD 1	10 Hz-20 kHz +0.5 dB	110	110	105	D	Yes, 4x	6	20
NIKKO AUDIO	NCD-600	10 Hz-20 kHz, +0.5 dB	85	X	90	A	X	1	5
ACCUPHASE	DP80/DC81	4 Hz-20 kHz, +0.3 dB	106	106	100	D	Yes, 2x	2	99



AUDIBLE FAST SEARCH	INDEXING	REMOTE CONTROL	HEADPHONE JACK	DIMENSIONS (inches)	WEIGHT (lbs.)	NOTES	SUGGESTED RETAIL PRICE
Yes	No	Yes	Yes	17.1 x 3.6 x 13.75	11	Black finish	400.00
Yes	Yes	Opt	No	14.9 x 3.5 x 12.1	9.9	Sansui's top-of-the-line	400.00
Yes	Yes	Yes	Yes, var	17 x 3.25 x 11.25	11	DA 12/86, 4-star rating	400.00
Yes	Yes	Yes	Yes, var	16.5 x 3.5 x 11.75	9	DA 11/86, 4.5-star rating	429.00
X	No	Yes	Yes	17 x 3 x 10.6	9.6	Remote w/ volume control	429.00
Yes	X	Yes	Yes	17 x 3 x 12.5	9.7	Remote w/ volume control	449.00
Yes	Yes	Yes	No	17 x 3 x 10.75	7.75	2-second search time	449.00
Yes	Yes	No	No	17 x 3.25 x 10.5	12	Black finish	449.95
No	Yes	No	No	16.6 x 4.1 x 13.3	16.6	5-disc cartridge	450.00
Yes	Yes	Yes	Yes	17.3 x 3.1 x 10.2	8.6	DA 12/86, 3-star rating	475.00
Yes	Yes	Yes	Yes, var	17.25 x 3.3 x 12.4	9.7	Black finish	480.00
Yes	Yes	Yes	No	16.5 x 3.3 x 12.2	10.8	Simple control design	498.00
Yes	X	Yes	Yes, var	16.9 x 2.9 x 12.7	11.25	Nakamichi's low-price player	499.00
Yes	Yes	Yes	No	17 x 3.25 x 10.5	12	Black finish	499.95
Yes	No	No	Yes	17.25 x 3.75 x 10	16	Compact Disc/Cassette Deck	499.95
Yes	No	Yes	Yes, var	16.5 x 3.8 x 12.7	17.6	6-disc changer, DA 6/86, 4 stars	499.95
Yes	Yes	Yes	Yes, var	17.3 x 3.25 x 9.75	X	Remote works with any system	499.95
No	No	No	No	13.2 x 4.4 x 14.1	13.4	Double drawer, DA 5/85, 3 stars	499.95
No	Yes	Yes	No	16.6 x 4.1 x 13.3	16.6	5-disc cartridge w/ remote	500.00
Yes	Yes	Yes	Yes, var	17 x 3.25 x 11.25	11	Random playback option	500.00
Yes	Yes	Yes	Yes	16.9 x 3.5 x 11	10.1	DA 10/86, 4-star rating	500.00
Yes	No	Yes	Yes, var	17.3 x 3.5 x 12.3	13.2	24-function remote	510.00
Yes	Yes	Yes	Yes, var	17.9 x 3.75 x 12.1	12.5	DA 2/86, 4-star rating	539.95
Yes	Yes	Yes	Yes	17 x 3 x 11.25	10	With Digital Time Lens	549.00
Yes	X	Opt	Yes	16.5 x 3.3 x 11.1	7.9	DA 8/86, 3-star rating	549.00
Yes	Yes	Yes	Yes, var	17.4 x 3.5 x 14	11.8	DA 1/87, 4.5-star rating	550.00
Yes	Yes	Yes	Yes, var	18.1 x 3.25 x 12.1	18	Ceramic laser isolators	550.00
Yes	Yes	Yes	Yes, var	17 x 3.5 x 13.25	15	Timer Switch	550.00
Yes	No	Yes	No	17.3 x 4 x 14	12	Exclusive low distortion output	575.00
Yes	No	Opt	Yes	17.7 x 3.4 x 12.3	13.2	Remote available w/ R-406 amp	580.00
Yes	Yes	Yes	Yes	17.1 x 3.6 x 14	13	Opto-coupling, DA 10/86, 4 stars	580.00
Yes	Yes	No	No	17.1 x 3.75 x 11	10	DA 3/86, 2.5-star rating	599.00
Yes	No	Yes	Yes, var	16.9 x 3.5 x 12.6	14.77	DA 6/85	599.00
Yes	Yes	Opt	Yes, var	17.1 x 3.7 x 11.4	10.5	Sub-code output jack	599.00
Yes	No	Yes	Yes	17.1 x 3.8 x 12.5	17	6 disc cartridge	599.95
Yes	X	Yes	Yes	17.25 x 4.4 x 12.2	X	Multi-disc player	600.00
Yes	Yes	Yes	Yes	17.25 x 3.3 x 12.4	9.9	Silver finish	600.00
Yes	Yes	Yes	Yes, var	17 x 3.25 x 13.25	15	1-second track access time	600.00
Yes	Yes	Yes	Yes	16.9 x 2.9 x 12.6	11	DA 3/87, 4-star rating	649.00
No	Yes	Opt	Yes	16.4 x 3.75 x 11.75	20.25	DA 8/85, 3.5-star rating	649.95
Yes	Yes	Yes	Yes, var	17.4 x 3.5 x 14	13.2	DA 6/86, 5-star rating!	650.00
Yes	Yes	No	No	19 x 3.5 x 11.25	13	With Digital Time Lens	650.00
Yes	Yes	Opt	Yes	18 x 3.5 x 11	8.5	Wood side panels	695.00
Yes	Yes	No	No	16.5 x 3 x 12.25	13.4	Unique design, top-loading	699.00
Yes	Yes	Yes	Yes	19 x 13.5 x 14.25	13	Includes Digital Time Lens	699.00
Yes	Yes	No	Yes	17 x 3.4 x 12	12	Imported from Canada	699.00
Yes	No	Yes	Yes, var	16.9 x 3.9 x 12.6	15.6	3-second track access time	699.00
Yes	Yes	Yes	Yes	17.1 x 2.2 x 11.5	16	"Zero distortion" circuit	699.00
Yes	Yes	Yes	Yes, var	17.1 x 4 x 11.5	11.1	Subcode output jack	699.00
No	Yes	Yes	Yes, var	17.25 x 3.1 x 11.5	13	Has timer switch	719.95
Yes	No	Yes	Yes, var	16.9 x 4.6 x 14.8	22.66	DA 2/85	749.00
Yes	Yes	Opt	No	19 x 3.75 x 10.6	14	1 pickup beam	795.00
Yes	Yes	Yes	Yes, var	17.1 x 4 x 11.5	11.4	Remote w/ volume control	799.00
Yes	Yes	Yes	Yes	17.1 x 3.7 x 10.3	11	DA 2/87, 2.5-star rating	799.95
Yes	No	Yes	Yes, var	17 x 4.25 x 15	16	10-disc cartridge	800.00
Yes	Yes	Yes	No	19 x 3.75 x 10.6	14	Same as KCD-20 w/remote	895.00
No	Yes	Yes	Yes, var	18 x 4.4 x 13.3	17.6	DA 10/84, 1-beam pickup	899.00
Yes	Yes	Yes	Yes, var	17.1 x 4 x 11.5	12.1	Remote w/ volume control	899.00

The sound is up-front and full of punch, but refined, without a hard edge. The CD4 balances the ideals of clarity and smoothness without the lopsided results produced by some players. In addition, the stereo panorama is correctly placed, with realistic ambience surrounding each instrument. Music reproduced through the CD4 is about as solid and seductive as you can get.

Individuality can be difficult to achieve and risky to maintain. But when you do it right, the rewards are infinitely greater than the conventional, me-too approach. By their choice of multinational engineering, styling, and manufacturing, and by merging high quality standard chips with proprietary design, ADS has created a player that succeeds in its individuality.

If unique, finely made technology is among the things you value, check out this player. If you are able to appreciate it, the ADS CD4 is one of the finer things in life. ☐

Ken Pohlmann wrote the book on digital audio, *Principles of Digital Audio*.

## Test Report ADS CD4

Continued from p. 35

Signal-to-Noise ratio on the left channel measured 99.2 dB unweighted and 101.9 dB A-weighted. The right channel measured 98.7 dB and 101.4 dBA.

Square wave response verified use of oversampling; only slight overshoot was observed. Single pulse response showed positive absolute polarity on the output. Twin tone phase linearity between 200 Hz and 2 kHz, and 2 kHz and 20 kHz, showed negligible phase shift. Interchannel phase error at 20 kHz was also negligible.

The CD4 failed to negotiate any strips on the radial strip torture disc. I assume this is a downfall limited to the reviewed unit. Horizontal impact immunity was above average. Vertical impact immunity was average.

—K.P.

Yes	Yes	Opt	Yes, var	17.5 x 2.75 x 14.8	20	DA 3/87, 4-star rating	900.00
Yes	Yes	Yes	Yes, var	16.5 x 4.7 x 16.1	25.3	Plays CDs and video discs	900.00
Yes	Yes	No	Yes	18.5 x 4.5 x 12.6	18.7	Ceramic laser isolators	950.00
Yes	Yes	Yes	Yes, var	17.5 x 3.5 x 13.5	17.5	"Zero distortion" circuit	950.00
Yes	No	Yes	Yes, var	16.9 x 3.9 x 12.6	15.6	DA 1/87, 4-star rating	995.00
Yes	Yes	Opt	No	16.5 x 3 x 12.75	17.8	Optional remote for \$150	999.00
Yes	Yes	Yes	Yes	17 x 3.4 x 12	12	Remote w/ volume control	999.00
Yes	Yes	Yes	Yes	X	X	CD player/Cassette Deck	999.00
Yes	Yes	Yes	Yes, var	17.2 x 3.9 x 14.8	17.7	Black finish	1000.00
Yes	Yes	Yes	Yes, var	17 x 3.25 x 14	20	Envelope error detection	1000.00
Yes	Yes	Yes	Yes	17 x 7 x 15	22	1-beam pickup	1000.00
Yes	Yes	Yes	Yes, var	17.5 x 4 x 13.5	20.1	"Zero distortion" circuit	1100.00
No	Yes	Yes	Yes, var	18 x 4.3 x 13.25	18.3	Calibration tone circuit	1150.00
No	Yes	No	No	16.6 x 3.6 x 11.8	16.5	Fixed and variable outputs	1195.00
Yes	Yes	Opt	Yes, var	17.5 x 2.75 x 14.8	20	DA 7/85, 4.5-star rating	1250.00
Yes	Yes	Yes	Yes, var	16.5 x 6.6 x 17.6	34.7	Plays videodiscs too	1300.00
Yes	Yes	Yes	Yes, var	17 x 3.25 x 14	20	Digital jack, DA 2/87, 5 stars!	1300.00
Yes	No	No	No	17.1 x 3.9 x 12.1	15.9	Suspended drive mechanism	1375.00
No	Yes	No	Yes, var	16 x 5.5 x 13	35	Wooden side and top panels	1399.00
Yes	Yes	Yes	Yes	17.25 x 4 x 15.3	23.2	Silver finish	1500.00
Yes	Yes	Yes	Yes, var	17.8 x 3.4 x 12.9	13.32	DA 10/85	1500.00
Yes	Yes	Yes	No	X	X	2 chassis design	1500.00
Yes	Yes	Yes	Yes	17 x 5.5 x 13	20.9	Adjustable feet	1600.00
Yes	Yes	Yes	Yes, var	17.1 x 3.9 x 12.1	15.9	Same circuitry as OMS-5A II	1650.00
Yes	Yes	Opt	No	19 x 5.5 x 12	17.6	Unique design w/ vacuum tubes	1895.00
No	Yes	No	No	X	37	3 D/A converters per channel	2500.00
No	No	No	Yes, var	18.5 x 14 x 15	56	60-disc rack, DA 5/85, 3 stars	4395.95
No	No	Yes	No	19 x 5.4 x 14.9	67	2 units	7000.00



## Shure D6000

Continued from p. 38

decoding, and analog output circuitry. A fair number of the LSI (large-scale integrated circuit) chips are manufactured by NEC, and there are a pair of Burr Brown PCM 56P D/A converters. The board is free of any jury-rigging and it seems to be quite well made. There is one small piggyback circuit board in evidence, but it is firmly secured to the chassis with two screws and so presents no problem.

A number of items inside the player verify Shure's attention to detail in the design of the D6000. For example, they included a relay mute on the audio output to prevent spurious output, and the level control potentiometer they specified is a high quality part.

The D6000 comported itself well in the listening room. Sound quality was clean and strong, and free of the hardness sometimes found in cheap players and in some portables. I felt that the stereo soundstage was nicely reproduced. The Shure did a good job with the placement of instruments in the stereo perspective, including creating a front to back placement. Reverberation and other ambient material appeared to be accurately reproduced.

In general, I was well satisfied with the sound of the D6000, and would place its sonics several notches above the average CD player. It should provide all the fidelity that most home audio reproduction systems can handle.

The Shure D6000 is a good example of a current generation CD player incorporating many of the design advantages of recent player technology. In short, a two-times oversampling player with dual D/A converters and solid construction is hard to beat. It may also reassure you to know that your money has been invested in essential player design, rather than front panel frills.

The D6000 is a good example of a company adapting to a changing marketplace. I sincerely hope that American audio companies such as Shure can continue to compete in the rapidly evolving audio scene, not only with technology researched and developed overseas, but with some of the home-grown variety as well.

And I don't mean research and development of phonograph cartridges. ☐

*Editor at Large Ken Pohlmann is Associate Professor and Director of the Music Engineering Program at the University of Miami, Florida.*

**\$130-  
\$399**

## AMPLIFIERS



MANUFACTURER	MODEL	WATTS/CHANNEL (into 8 ohms)	WATTS/CHANNEL (continuous average into 4 ohms)	POWER BANDWIDTH	RATED THD (%)
PARASOUND	CA215	15	28	30 Hz-20 kHz	0.1
PARASOUND	VSE1	12.5	18	30 Hz-20 kHz	0.5
AKAI	AM-A202	50	X	40 Hz-20 kHz	0.3
LUXMAN	LV-90	28	X	20 Hz-20 kHz	0.05
NAD	3130	45	58	20 Hz-40 kHz	0.03
YAMAHA	A420	50	X	10 Hz-50 kHz	0.007
AKAI	AM-A302	80	X	20 Hz-20 kHz	0.09
ONKYO	A-8037	50	75	20 Hz-20 kHz	0.06
TECHNICS	SU-V40	50	50	20 Hz-20 kHz	0.003
HARMAN/KARDON	PM635	30	X	10 Hz-60 kHz	0.09
KENWOOD	KA-75	80	X	10 Hz-50 kHz	0.09
VECTOR RESEARCH	VA-1100	40	60	20 Hz-20 kHz	0.03
DENON	PMA-300V	60	80	20 Hz-20 kHz	0.05
DUAL	CV1260	60	80	10 Hz-45 kHz	0.03
FUJITECH	A1033	30	30	20 Hz-20 kHz	0.4
CANON	AM-10	40	50	20 Hz-20 kHz	0.09
QED	A230S	30	50	10 Hz-30 kHz	0.01
ROTEL	RA-820BX	25	35	20 Hz-20 kHz	0.05
PROTON	D540	40	80	20 Hz-20 kHz	0.02
PROTON	D530R	30	50	20 Hz-20 kHz	0.02
RCA	Dimensia MSA100	50	X	20 Hz-20 kHz	0.05
PARASOUND	CA250	50	85	20 Hz-40 kHz	0.03
AKAI	AM-A402	100	X	20 Hz-20 kHz	0.09
LUXMAN	LV-100	35	X	20 Hz-20 kHz	0.05
HARMAN/KARDON	PM645	40	X	10 Hz-80 kHz	0.09
KENWOOD	KA-95	125	X	10 Hz-60 kHz	0.05
YAMAHA	A520	75	X	10 Hz-50 kHz	0.005
NIKKO	NA-2000	85	170	5 Hz-45 kHz	0.01
PIONEER	SA-V1160	100	X	20 Hz-20 kHz	0.05
VECTOR RESEARCH	VA-1400	60	100	20 Hz-20 kHz	0.03
ONKYO	A-8057	65	100	20 Hz-20 kHz	0.018
AR	A-04	40	60	20 Hz-20 kHz	0.03
TECHNICS	SU-V60	90	90	20 Hz-20 kHz	0.002
NEC	A-7E	50	100	20 Hz-20 kHz	0.006
BRITISH FIDELITY	A-1	20	X	30 Hz-20 kHz	X
QED	A240CD	40	65	5 Hz-30 kHz	0.01
SONY	TA-F222ES	80	110	5 Hz-100 kHz	0.006
KENWOOD	KA-880SD	100	140	5 Hz-50 kHz	0.005
DENON	PMA-500V	80	130	20 Hz-20 kHz	0.05
MISSION	Cyrus I	30	50	1 Hz-55 kHz	0.004
RCA	Dimensia MSA200	100	X	20 Hz-20 kHz	0.05
ROTEL	RA-840BX	40	58	20 Hz-20 kHz	0.03

**\$400-  
\$1000**

## AMPLIFIERS

MANUFACTURER	MODEL	WATTS/CHANNEL (into 8 ohms)	WATTS/CHANNEL (continuous average into 4 ohms)	POWER BANDWIDTH	RATED THD (%)
JVC	AX-70BK	70	X	5 Hz-30 kHz	0.007
LUXMAN	LV-101	45	X	20 Hz-20 kHz	0.03
AR	A-06	60	90	20 Hz-20 kHz	0.03
HITACHI	HA6	100	X	20 Hz-20 kHz	0.005
NAD	3155	65	75	20 Hz-40 kHz	0.03
ONKYO	A-8067	80	135	20 Hz-20 kHz	0.015
PIONEER	SA-V70	50, 25	X	20 Hz-20 kHz	0.04
SONY	TA-F444ES II	100	130	5 Hz-100 kHz	0.004
TECHNICS	SU-V7X	100	100	20 Hz-20 kHz	0.003
YAMAHA	A720	105	X	10 Hz-50 kHz	0.005
AKAI	AM-A70	100	X	20 Hz-20 kHz	0.05
NAD	3300	80	100	3 Hz-60 kHz	0.03
SAE	I102	60	90	20 Hz-20 kHz	0.02
PIONEER	A-77X Elite	100	X	20 Hz-20 kHz	0.003
MARANTZ	PM560	110	X	20 Hz-20 kHz	0.04
SANSUI	AU-G55X	65	X	20 Hz-20 kHz	0.004
QED	A240SA	40	65	5 Hz-30 kHz	0.01
DENON	PMA-700V	100	150	20 Hz-20 kHz	0.02
PIONEER	A-V1200	80	120	20 Hz-20 kHz	0.007
ADS	A2	80	100	20 Hz-20 kHz	0.05
HARMAN/KARDON	PM655	60	X	10 Hz-100 kHz	0.08
LUXMAN	LV-102	65	X	20 Hz-20 kHz	0.03
ONKYO	A-8087	100	170	20 Hz-20 kHz	0.012
JVC	A-X900B	120	X	7 Hz-60 kHz	0.003
MISSION	Cyrus II	60	100	1 Hz-55 kHz	0.004
NEC	A-10E	80	120	20 Hz-20 kHz	0.004
ROTEL	RA-870	60	115	20 Hz-20 kHz	0.03
YAMAHA	A1020	125	X	10 Hz-50 kHz	0.005
JVC	AX-90VBK	120	X	5 Hz-50 kHz	0.007
TECHNICS	SU-V10X	120	120	20 Hz-20 kHz	0.003
AKAI	AM-A90	130	X	20 Hz-20 kHz	0.05
LUXMAN	LV-103	50	X	20 Hz-20 kHz	0.3
SANSUI	AU-G77XII	110	X	20 Hz-20 kHz	0.003
AUDIOLAB	8000 A	50	100	2 Hz-65 kHz	0.05
BRITISH FIDELITY	A-100	50	X	30 Hz-20 kHz	X
NEC	A-1300E	130	X	10 Hz-70 kHz	0.05
PIONEER	A-88X Elite	120	X	20 Hz-20 kHz	0.003
DENON	PMA-900V	120	200	20 Hz-20 kHz	0.02
KENWOOD	KA-1100SD	150	228	5 Hz-90 kHz	0.004
HARMAN/KARDON	PM685	100	X	10 Hz-100 kHz	0.08
KYOCERA	A-710	100	140	X	0.03
LUXMAN	LV-105	80	X	20 Hz-20 kHz	0.3
SANSUI	AU-G99X	160	X	20 Hz-20 kHz	0.003



RATED IHF IM (%)	CLASS OF OPERATION	DYNAMIC HEADROOM (dB)	OUTPUT POWER METERS	WEIGHT (lbs.)	NOTES	SUGGESTED RETAIL PRICE
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0.03	AB	1	No	11	X	129.95
0.05	AB	0.6	No	11	Stereo synthesizer	129.95
X	B	X	No	12.75	5-band graphic EQ	180.00
0.015	AB	X	No	12.1	Direct-coupled CD input	220.00
0.03	AB	X	No	18	Bass EQ	228.00
0.005	AB	X	No	13	Switchable subsonic filter	229.00
X	B	X	Yes	15	5-band graphic EQ	230.00
0.06	Linear AB	1.5	No	15	Low-end version of "A" series	230.00
0.007	New A	X	No	13.9	Phono EQ	230.00
X	AB	X	No	13.5	Black finish	235.00
X	X	X	Yes	14.5	X	235.00
0.03	AB	2.5	Yes	13	LED level meters	249.95
0.005	X	X	No	13	7 audio input terminals	250.00
0.03	A	3	Yes	18	Uses MOSFET	250.00
0.9	X	6	No	48	Tube amp, comes as kit	260.00
X	X	X	Yes	11	Has graphic equalizer	275.00
X	AB	X	No	10	Black finish	275.00
0.05	AB	3	No	12	25 amps peak to peak	289.00
0.02	X	6	No	19.25	Dynamic Power on Demand	299.00
0.02	X	6	No	19	Remote optional	299.00
0.09	AB	X	Yes	12.6	Remote optional	299.00
0.015	AB	2	No	16	Peak/Clip indicators	299.95
X	B	X	Yes	16	5-band graphic EQ	300.00
0.015	AB	X	No	13.2	Tape dubbing capability	300.00
X	AB	X	No	14.25	Black finish	310.00
X	X	X	Yes	18.7	X	320.00
0.005	AB	X	No	16.5	MM/MC cartridge switching	329.00
0.01	AB	X	No	22	Peak/Clip indicators	329.95
0.05	X	X	No	17.1	2 video inputs, 4 audio inputs	329.95
0.03	AB	2.5	Yes	20	LED level meters	329.95
0.005	Linear AB	1.9	No	23	Black finish, 6 inputs	330.00
0.03	AB	2	No	X	X	340.00
0.005	New A	X	No	18.8	Phono EQ	345.00
0.006	AB	2	No	28	X	349.00
X	A	X	No	X	X	350.00
X	AB	X	No	11	Conductive film vol. control	350.00
0.006	AB	2	No	28.75	Black finish	350.00
0.005	X	X	No	20.7	X	355.00
0.003	X	X	No	21	No negative feedback	370.00
0.005	AB	1.4	No	8.8	Direct-coupled design	399.00
0.09	AB	X	No	19.8	Remote optional	399.00
0.03	AB	3	No	17	29 amps peak to peak	399.00

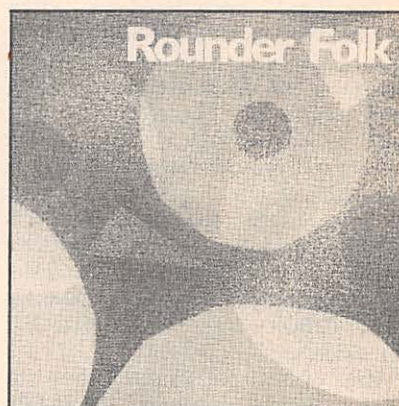
0.007	Super A	X	No	17.2	7-band graphic EQ	400.00
0.005	AB	X	No	18.7	Inputs/outputs for video	420.00
0.03	AB	2	No	X	X	430.00
0.008	B	X	No	25	X	430.00
0.03	AB	3	No	21.5	Overload protected inputs	448.00
0.005	Linear AB	2.3	No	27	Black finish, 6 inputs	450.00
0.04	X	X	No	22.1	Remote, surround sound	450.00
0.004	AB	1.8	No	32.5	Black finish	450.00
0.003	New A	X	No	24.3	7 audio, 3 video sig. switch	460.00
0.002	A/AB	1.4	No	22.5	Extended rolloff EQ	469.00
X	B	X	No	25.5	Video inputs	475.00
0.03	AB	6	No	X	Peak/Clip indicators	498.00
0.02	AB	1	No	26	Programmable tone settings	499.00
0.003	X	X	No	33.1	Non-switching	499.95
0.04	AB	X	No	23	5-band graphic EQ	500.00
0.004	X	X	Yes	18.5	LED peak level meters	500.00
X	AB	X	No	11	CD input direct-coupled	525.00
0.003	X	X	No	24	No negative feedback	530.00
0.007	X	X	No	25.2	10 inputs—5 audio, 5 video	539.95
0.05	AB	2	Yes	20	Optional system remote	550.00
X	AB	X	No	22.25	Black finish	550.00
0.005	AB	X	No	19.8	Includes video amp.	550.00
0.005	Linear AB	1.6	No	31	Black finish, 6 inputs	550.00
0.001	Super A	X	No	27.6	"Gm" noise reduction circuit	590.00
0.004	AB	1.4	No	11	Direct-coupled design	599.00
0.004	AB	2	No	53	X	599.00
0.03	AB	3	No	21	Dual mono design	599.00
0.002	A/AB	1.4	No	25.3	Dual phono inputs	599.00
0.007	Super A	X	No	22.1	Remote incl., 7-band graphic EQ	600.00
0.003	New A	X	No	29.8	7 audio, 3 video sig. switch	600.00
X	B	X	No	27.5	Video inputs	645.00
0.01	AB	X	No	22.4	Hybrid transistor-tube amp	650.00
0.003	X	X	Yes	26.5	LED meters	650.00
0.05	AB	X	No	17	Split operation ability	695.00
X	A	X	No	X	X	695.00
0.05	B	3	No	30.5	Remote incl., Peak/Clip ind.	699.00
0.003	X	X	No	39.1	Black finish	699.95
0.003	X	X	No	25	No negative feedback	700.00
0.003	X	X	No	32.3	X	705.00
X	AB	X	No	33	Black finish	775.00
0.03	AB	0.7	No	44	Peak/Clip indicators	800.00
0.01	AB	X	No	23.3	Hybrid transistor-tube amp	800.00
0.003	X	X	Yes	38	LED meters	1000.00

## Reviews

Continued from p. 74



## FOLK



### Various Artists:

#### Rouder Folk

Producers: Various

Engineers: Various

Rykodisc RCD 20018 (AAD) (86)

Total disc time: 63:03

Modest, heartfelt, and straightforward, *Rouder Folk* is a refreshing sampler of artists recording in the often ignored idiom of American folk music.

Of course, the people at Rouder Records realize that there's no commercial gold mine to be made off this music. But this disc, with its large stylistic range, might do alright. Those who run from anything labeled "folk," thinking it old-fashioned or passé, might be surprised by the beauty and variety of this recording.

*Rouder Folk* offers its share of standard folk fare—though to call these songs "standard fare" is to misleadingly dismiss their abundant humor, charm, and grace. But the key to this 60-minute-plus set is its variety. Just listen to the inspired hip-hop of Bob Brozman's "Twelfth Street Rag," the imaginative guitar virtuosity of John Fahey on "Atlantic High," or the evocative beauty of Pentangle's "The Dolphin." These and other selections bring a diversity to the collection, yet still mix well with the more traditional folk material.

Virtually all of the 21 artists on *Rouder Folk* offer exceptional performances, though a few selections sound comparatively trite. And, while each track comes from a different tape source, sound quality is remarkably





consistent throughout.

The simple, uncluttered production afforded this material reveals very little analog hiss, while the CD format greatly enhances the disc's overall separation and brightness. The warm acoustic settings ring through with impressive clarity and dynamic range, especially at the high end.

Banjo, fiddle, and mandolin burst forth in jubilant ecstasy on Tony Rice's "Cold On The Shoulder." Christine Lavin's crisp, percussive guitar and sly vocal delivery make "Cold Pizza For Breakfast" a sheer delight.

Fans of National Public Radio's "A Prairie Home Companion," or of folk music in general, will be pleased with this heartwarming and gently inspiring collection. Those who favor the slick confines of contemporary radio, however, may be lost on *Rounder Folk's* homespun subtleties.

Scott Belford

## DOC & MERLE WATSON DOWN SOUTH



### Doc and Merle Watson: Down South

Producer: Merle Watson

Engineer: Carl Rudisill

Mixing: Merle Watson, Carl Rudisill

RYKO RCD 10008 (ADD)

Total disc time: 31:44

For more information on the products and manufacturers listed in the **Buyer's Guide**, simply call Suzanne at (800) 722-7785, ext. 535.

\$69-  
\$400

## SPEAKERS



MANUFACTURER

MODEL

MANUFACTURER	MODEL	FREQUENCY RESPONSE (±3 dB unless noted)	MINIMUM CONTINUOUS RECOMMENDED POWER (watts)		MAXIMUM CONTINUOUS RECOMMENDED POWER (watts)		SENSITIVITY (dB SPL/1watt/1meter)	NOMINAL IMPEDANCE (ohms)
INFINITY	RS 1000	72 Hz-22 kHz	8	50	89	6		
INFINITY	RS 2000	57 Hz-22 kHz	15	75	89	6		
INFINITY	RS 3000	45 Hz-22 kHz	20	100	89	6		
BOSTON ACOUSTICS	A40 II	65 Hz-20 kHz	5	50	89	8		
POLK AUDIO	Monitor 4A	31 Hz-25 kHz	10	80	92	4		
BOSTON ACOUSTICS	A40 V II	68 Hz-20 kHz	5	50	88.5	8		
POLK AUDIO	Monitor 4.5	30 Hz-25 kHz, +4 dB	10	80	92	4		
POLK AUDIO	VS-12	30 Hz-25 kHz	3	125	93	6		
BANG & OLUFSEN	CX 50	80 Hz-20 kHz	20	X	89	6		
BOSE	Music Monitor	X	10	60	X	4		
AUDIO PULSE	825	45 Hz-20 kHz	15	35	89	6		
ENERGY BY API	ESM-4	60 Hz-20 kHz	10	80	88	8		
EPI	T/E 70 II	55 Hz-20 kHz	15	90	88	8		
BOSTON ACOUSTICS	A60 II	52 Hz-20 kHz	10	75	90	8		
KEF	C-10	90 Hz-20 kHz	10	100	88	8		
PAISLEY RESEARCH	Reference .5	45 Hz-20 kHz, ±3.5 dB	20	75	87	6		
PHASE TECHNOLOGY	325ES	55 Hz-20 kHz	15	80	92	4		
BOSE	RoomMate System	X	X	X	X	X		
INFINITY	RS 4000	44 Hz-32 kHz	20	125	89	6		
JBL	JBL62	X	10	100	89	8		
MIRAGE ACOUSTICS	200	60 Hz-20 kHz	15	70	89	8		
INFINITY	SM 100	35 Hz-27 kHz	10	150	98	8		
SOUND DYNAMICS BY API	110S Mark II	50 Hz-20 kHz	10	70	93	8		
3D ACOUSTICS	Cube	70 Hz-20 kHz	15	100	88	8		
BANG & OLUFSEN	CX 100	50 Hz-20 kHz	10	X	89	6		
ENERGY BY API	ESM-3	45 Hz-22 kHz	10	80	86.5	8		
PARADIGM	3se-mini	55 Hz-20 kHz, +2 dB	20	80	88	8		
SOUND DYNAMICS BY API	SDM Monitor .2	45 Hz-20 kHz	5	65	93	8		
BOSE	201 Series II	X	5	60	X	8		
POLK AUDIO	Monitor 5 Jr.	30 Hz-26 kHz	10	100	92	4		
ALLISON ACOUSTICS	110	X	15	150	87	4		
AMERICAN ACOUSTICS	D2500	65 Hz-22 kHz	X	39	91.5	4-8		
EPI	T/E 100 II	40 Hz-20 kHz	15	100	88	8		
KINDEL AUDIO	P-50 MKII	50 Hz-20 kHz	20	75	86	8		
MIRAGE ACOUSTICS	250	60 Hz-20 kHz	15	80	90	8		
PAISLEY RESEARCH	Reference One	40 Hz-20 kHz	20	100	89	6		
TECHNICS	SB-R100	55 Hz-30 kHz	X	100	87	8		
CANTON	Plus S	45 Hz-30 kHz, +6 dB	X	40	87.2	4		
FANFARE ACOUSTICS	Prelude	55 Hz-22 kHz, +2 dB	20	X	90	6		
TECHNICS	SB-F1 MK2	48 Hz-35 kHz	X	80	86	8		
INFINITY	RS 5000	42 Hz-32 kHz	20	X	89	6		
ADS	200-CC	85 Hz-20 kHz	10	50	88	4		
PARADIGM	3se	45 Hz-20 kHz, +2 dB	15	100	91	8		
KEF	C-20	72 Hz-20 kHz	10	150	90	8		
POLK AUDIO	VS-19	28 Hz-25 kHz	3	100	93	6		
JPW LOUDSPEAKERS	P1	65 Hz-20 kHz	10	70	89	8		
AUDIO PULSE BY API	835	40 Hz-20 kHz	15	50	90	6		
BOSTON ACOUSTICS	A70	40 Hz-25 kHz	15	75	90	6		
MAGNAT	Monitor A	40 Hz-22.5 kHz	15	60	88	8		
MIRAGE ACOUSTICS	350	57 Hz-20 kHz	10	100	92	4		
SOUND DYNAMICS BY API	SDM Monitor .3	40 Hz-20 kHz	8	80	95	8		
TECHNICS	SB-L35	42 Hz-22 kHz	X	100	92	8		
TECHNICS	SB-F2 MK2	55 Hz-33 kHz	X	100	88	8		
TECHNICS	SB-X300A	38 Hz-33 kHz	X	110	90	8		
ALLISON ACOUSTICS	120	X	15	150	87	4		
EPI	T/E 120 II	38 Hz-20 kHz	15	100	88	8		
EPI	Magnus A10	45 Hz-20 kHz	10	100	91	4		
JBL	JBL82	X	10	125	90	8		
SOUND DYNAMICS BY API	200S	36 Hz-22 kHz	8	150	99	8		
PHASE TECHNOLOGY	PC 40	70 Hz-20 kHz	15	150	89	4		
POLK AUDIO	VS-25	28 Hz-25 kHz	3	80	93	6		
CAMBER ACOUSTICS	1.5	55 Hz-20 kHz	10	X	89	8		
ADS	L470	50 Hz-20 kHz	15	75	88	8		
ALTEC LANSING	101	40 Hz-22 kHz	X	100	91	6		
AMERICAN ACOUSTICS	D3500	60 Hz-22 kHz	X	42	94.5	4-8		
MAGNAT	Monitor B	40 Hz-34 kHz	15	80	89	4-8		
KINDEL AUDIO	P-100 MKII	50 Hz-22 kHz	20	75	86	8		
JPW LOUDSPEAKERS	AP2	60 Hz-20 kHz	10	80	89	8		
ENERGY BY API	ESM-2	40 Hz-22 kHz	12	100	86	8		
DB PLUS	440	45 Hz-22 kHz	10	80	94	8		
KEF	C-30	60 Hz-20 kHz	10	150	90	8		
LINN LOUDSPEAKERS	Index	60 Hz-20 kHz	10	50	86	8		
PARADIGM	5se	40 Hz-20 kHz, +2 dB	15	150	91	8		
SHAHINIAN ACOUSTICS	EIF	55 Hz-21 kHz	25	X	90	6		
TECHNICS	SB-L95	32 Hz-22 kHz	X	200	93	8		
INFINITY	SM 120	32 Hz-27 kHz	10	200	98	8		
EPI	T/E 250 II	42 Hz-20 kHz	15	250	88	6		
MIRAGE ACOUSTICS	450	56 Hz-20 kHz, +2 dB	15	100	90	8		
ADS	300-CC	65 Hz-20 kHz	10	50	89	4		
ADS	L300-W	65 Hz-20 kHz	10	100	89	4		
PAISLEY RESEARCH	Reference Two	35 Hz-20 kHz, +2 dB	20	100	88	6		
CANTON	GL 260	45 Hz-30 kHz, +6 dB	X	45	87.3	4		
B & W LOUDSPEAKERS	DM110	70 Hz-20 kHz	10	75	90	8		
POLK AUDIO	Monitor 5B	28 Hz-26 kHz	10	125	91	4		
HARTLEY	H-100	50 Hz-20 kHz, +4 dB	5	50	X	8		
CANTON	Fonum 30	36 Hz-30 kHz, +6 dB	X	50	89.7	8		
BOSTON ACOUSTICS	A100 II	38 Hz-25 kHz	15	75	90	8		
CERWIN-VEGA	D-1	30 Hz-20 kHz, +4 dB	5	100	92	8		
PHASE TECHNOLOGY	535ES	40 Hz-20 kHz	15	100	92	4		
ROGERS LOUDSPEAKERS	LS2	60 Hz-20 kHz, +2 dB	15	100	87	8		
AUDIO PULSE	1035	35 Hz-20 kHz	15	60	91	6		
CANTON	GL 300F	48 Hz-30 kHz, +6 dB	X	45	87.3	4		
EPI	T/E 280 II	32 Hz-20 kHz	15	100	90	6		
EPI	Magnus A11	40 Hz-20 kHz	10	110	92	4		



DESIGN PRINCIPLE	WOOFER DIAMETER (inches)	MIDRANGE DIAMETER TYPE	TWEETER DIAMETER TYPE	CROSSOVER FREQUENCIES	DIMENSIONS (nearest inch)	WEIGHT (lbs.)	SUGGESTED RETAIL PRICE
Sealed box	4.5	none	1.3 in./dome	5.5 kHz	13 x 8 x 7	9	69.00
Sealed box	6.5	none	1.3 in./dome	4.5 kHz	14 x 9 x 8	14	99.00
Sealed box	8	none	1 in./dome	4 kHz	20 x 12 x 10	28	149.00
Acoustic Suspension	6.5	none	0.75 in./cone	3.5 kHz	14 x 8 x 7	9	160.00
Ported	none	6.5 in./cone	1 in./dome	4.5 kHz	15 x 9 x 7	16	168.00
Acoustic Suspension	6.5	none	0.75 in./cone	3.5 kHz	14 x 8 x 7	9	180.00
Ported	none	6.5 in./cone	1 in./dome	X	17 x 9 x 9	20	198.00
Ported	none	6.5 in./cone	1 in./dome	3 kHz	15 x 9 x 11	20	198.00
Acoustic Suspension	4	none	1 in./dome	2.5 kHz	8 x 8 x 4	8	198.00
Ported	4.5	none	none	none	6 x 9 x 5	5	199.00
Bass Reflex	8	none	1 in./cone	5 kHz	23 x 12 x 10	18	200.00
Bass Reflex	6.5	none	0.75 in./dome	2.5 kHz	14 x 10 x 10	11	200.00
Infinite Baffle	6	none	1 in./dome	1.8 kHz	18 x 11 x 6	13	200.00
Acoustic Suspension	8	none	1 in./dome	3 kHz	18 x 11 x 8	16	220.00
Acoustic Suspension	6	none	1 in./dome	X	12 x 9 x 7	8	220.00
Ported	6.5	none	0.75 in./dome	2.5 kHz	16 x 10 x 9	15	220.00
Acoustic Suspension	6.5	none	0.5 in./dome	2.5 kHz	17 x 8 x 9	17	225.00
Self-Amplified	4.5	none	none	none	6 x 9 x 6	5.8	229.00
Sealed box	8	3.5 in./cone	0.3 x 1.3 in./EMIT	500 Hz, 5 kHz	22 x 12 x 10	30	229.00
Ducted Port	6.5	none	1 in./dome	3 kHz	16 x 10 x 7	16	230.00
Acoustic Suspension	6.5	none	0.75 in./dome	4 kHz	17 x 10 x 7	14	230.00
Tuned Port	10	none	1 in./dome	2.5 kHz	30 x 14 x 12	53	239.00
Bass Reflex	6.5	none	1 in./dome	2 kHz	16 x 10 x 9	16	240.00
Acoustic Suspension	6	none	0.75 in./dome	2.5 kHz	10 x 10 x 10	27.5	240.00
Acoustic Suspension	(2) 4	none	1 in./dome	2.5 kHz	12 x 4 x 8	13.5	250.00
Bass Reflex	8	none	0.75 in./dome	2 kHz	20 x 11 x 9	20	250.00
Bass Reflex	6.5	none	1 in./dome	3 kHz	15 x 9 x 10	17	250.00
Bass Reflex	8	none	1.75 in./horn	X	23 x 12 x 9	27	250.00
Ported	6	none	3 in./cone	X	9 x 15 x 8	20	254.00
Ported	none	6.5 in./cone	1 in./dome	3 kHz	17 x 9 x 9	22.5	258.00
Acoustic Suspension	8	none	1 in./cone	2 kHz	18 x 12 x 8	16.5	260.00
Vented	6.5	none	1 in./horn	3 kHz	13 x 9 x 7	12	260.00
Infinite Baffle	8	none	1 in./dome	1.8 kHz	21 x 13 x 7	18	260.00
Acoustic Suspension	6.5	none	2.25 in./cone	2.5 kHz	14 x 8 x 8	16	260.00
Acoustic Suspension	8	none	1 in./dome	4 kHz	16 x 12 x 7	14	260.00
Ported	8	none	0.75 in./dome	2.2 kHz	19 x 10 x 9	20	260.00
Flat Coaxial	none	none	Flat Coax	2 kHz	13 x 13 x 3	4.9	260.00
Acoustic Suspension	4	none	1 in./dome	2.2 kHz	8 x 5 x 4	5	275.00
Tuned Port	6.5	none	0.75 in./dome	3.5 kHz	14 x 10 x 10	16	275.00
Sealed, Honeycomb	4.75	none	1.1 in./cone	2 kHz	9 x 6 x 6	6.4	275.00
Sealed box	10	3.5 in./cone	0.3 x 1.3 in./EMIT	500 Hz, 5 kHz	24 x 15 x 12	34	279.00
Acoustic Suspension	4	none	1 in./dome	2.5 kHz	7 x 4 x 5	4.5	280.00
Bass Reflex	8	none	1 in./dome	2.5 kHz	20 x 10 x 11	22	280.00
Acoustic Suspension	8	none	1 in./dome	X	14 x 10 x 9	12	290.00
Ported	none	6.5 in./cone	1 in./dome	3 kHz	17 x 9 x 11	24	298.00
Infinite Baffle	8	none	0.75 in./dome	3.2 kHz	17 x 10 x 10	17	299.50
Bass Reflex	8	4.5 in./cone	1.75 in./cone	2 kHz, 7 kHz	23 x 12 x 9	20	300.00
Acoustic Suspension	8	none	1 in./dome	2 kHz	24 x 14 x 8	26	300.00
Infinite Baffle	8	4 in./cone	0.75 in./dome	950 Hz, 5 kHz	19 x 14 x 14	18	300.00
Acoustic Suspension	8	none	1 in./dome	4 kHz	18 x 12 x 9	24	300.00
Bass Reflex	8	4 in.	1.75 in./horn	X	23 x 12 x 9	27	300.00
Bass Reflex	10	none	2.1 in./cone	4 kHz	23 x 13 x 9	16.3	300.00
Sealed, Honeycomb	5.5	none	1.1 in./flat	2.5 kHz	6 x 10 x 7	11	300.00
Bass Reflex	9	2 in./cone	1.1 in./cone	900 Hz, 3 kHz	23 x 12 x 11	20.9	300.00
Acoustic Suspension	8	none	1 in./cone	2 kHz	22 x 14 x 8	21.25	320.00
Infinite Baffle	10	none	1 in./dome	1.8 kHz	26 x 16 x 8	24	320.00
Bass Reflex	10	none	1 in./horn	4 kHz	23 x 13 x 12	X	320.00
Ducted Port	8	none	1 in./dome	3 kHz	22 x 14 x 8	30	330.00
Bass Reflex	10	none	1 in./dome	2 kHz	23 x 12 x 11	35	330.00
Acoustic Suspension	5.25	none	1 in./dome	1.5 kHz	10 x 6 x 5	10	335.00
Passive Radiator	6.5	6.5 in./cone	1 in./dome	100 Hz, 3 kHz	21 x 9 x 11	27	338.00
Ported	6.5	none	0.75 in./dome	3.5 kHz	16 x 11 x 10	21	339.00
Acoustic Suspension	7	none	1 in./dome	2 kHz	16 x 10 x 10	18.5	340.00
Acoustic Suspension	6	none	1 in./dome	2.5 kHz	17 x 10 x 9	20	340.00
Vented	8	none	1 in./horn	3 kHz	19 x 11 x 8	19	340.00
Infinite Baffle	8	4 in./cone	1 in./dome	800 Hz, 2 kHz	21 x 14 x 14	20	340.00
Acoustic Suspension	6.5	2.25 in./cone	0.75 in./dome	1.5 kHz, 8 kHz	18 x 9 x 9	21	345.00
Infinite Baffle	8	none	0.75 in./dome	3.2 kHz	17 x 10 x 10	21	349.50
Bass Reflex	8	none	1 in./dome	2 kHz	24 x 11 x 11	24	350.00
Bass Reflex	6.5	none	1 in./dome	3 kHz	16 x 10 x 9	16	350.00
Acoustic Suspension	8	none	1 in./dome	X	20 x 10 x 9	16	350.00
Infinite Baffle	8	none	1 in./dome	2 kHz	17 x 11 x 8	17	350.00
Bass Reflex	8	none	1 in./dome	2.5 kHz	21 x 10 x 12	24	350.00
Vented	5.25	none	1 in./dome	4.5 kHz	13 x 8 x 7	13	350.00
Bass Reflex	15	4 in./cone	2.1 in./cone	3 kHz, 5 kHz	31 x 18 x 13	35.9	350.00
Tuned Port	12	4.5 in./cone	1 in./dome	750 Hz, 5.5 kHz	33 x 16 x 12	64	359.00
Infinite Baffle	8	4 in./cone	1 in./dome	900 Hz, 2.5 kHz	26 x 16 x 8	26	360.00
Acoustic Suspension	8	none	1 in./dome	4 kHz	24 x 12 x 9	25	360.00
Acoustic Suspension	5.25	none	1 in./dome	2.5 kHz	9 x 6 x 6	7	370.00
Ported	8	none	1 in./dome	2 kHz	9 x 6 x 7	8	370.00
Acoustic Suspension	6	none	1 in./dome	1.7 kHz	24 x 12 x 11	31	370.00
Acoustic Suspension	8	none	1 in./dome	3 kHz	10 x 7 x 5	7.5	375.00
Passive Radiator	8	6.5 in./cone	1 in./dome	60 Hz, 3 kHz	19 x 10 x 10	19	378.00
Aligned air column	8	1.5 in./column	2 in./cone	2300 Hz	22 x 11 x 11	X	379.95
Acoustic Suspension	7	1.25 in./dome	0.75 in./dome	900 Hz, 4.5 kHz	13 x 9 x 8	10.5	389.00
Acoustic Suspension	10	none	1 in./dome	2 kHz	33 x 16 x 8	44	390.00
Ported	8	none	1 in./horn	3 kHz	20 x 11 x 10	25	390.00
Acoustic Suspension	6.5	6.5 in./cone	1 in./dome	100 Hz, 1.7 kHz	33 x 9 x 10	32	395.00
Bass Reflex	5	none	0.75 in./dome	4 kHz	14 x 9 x 8	13	399.00
Bass Reflex	10	4.5 in./cone	1.75 in./cone	2 kHz, 5 kHz	24 x 14 x 9	25	400.00
Acoustic Suspension	6	none	1 in./dome	1.7 kHz	13 x 9 x 3	7.5	400.00
Passive Radiator	8	none	1 in./dome	1.8 Hz	31 x 12 x 9	28	400.00
Bass Reflex	10	6 in./cone	1 in./horn	500 Hz, 4 kHz	23 x 13 x 12	X	400.00



Doc and the late Merle Watson are probably the best representatives of the American folk genre. Over the years, their precision instrumental work and Doc's singing have matured on each successive album. While the father/son guitar duo have done instrumental recordings, this is primarily a vocal disc.

Of the twelve cuts here, only one is an instrumental. In the others, the musicians always maintain their proper role of supporting the vocals. Not to say that the guitar and banjo solos aren't marvelous—they are. But the complex runs and licks are in the background during the vocals, unlike earlier albums where runs often intruded between lyric phrases.

All of Doc's vocals are gems, ranging from the humorous "Fifteen Cents" to the solo *cappella* gospel number "What a Friend We Have in Jesus." Doc is a storyteller, and these songs have a warm sense of storytelling to them. Corny as it may sound, you really get the feeling that he is sitting in your living room, casually winding through his jokes and stories.

Merle performs more of the guitar and banjo leads than his father—a departure from the pair's earlier recordings. Together, they are the best guitar duo in folk music. Regardless of the complexity of the music, there is always a down-home sense of fun. Nothing is forced.

The supporting musicians are excellent. Sam Bush—usually a hard-playing, hard-driving bluegrass fiddler—shows restraint and a fine sense of tradition in his solo work on the disc's only instrumental, "Twin Sisters."

The CD medium and some brilliant engineering place these folks right in front of you. There is some analog hiss here and there, but it is negligible. Also, at times, the guitars sound a shade too brittle. Thankfully, the engineers avoided wide separation and heavy bass (CD macho). The musicians sound like they're sitting next to each other. Mr. Rudisill, the disc's engineer, obviously understood the personal and very human tradition he was recording.

Sadly, I have to give the disc a "4" on my unofficial "bang-for-the-buck" scale. Less than half of the disc's 72-minute capability is used. But still, I don't think you could find a better introduction to American folk music, or a better showcase of two great folk talents, Doc and Merle.

Joel L. Amromin





# NEW AGE



**Albert Lee:**  
**Speechless**

Producers: Albert Lee, Bradley Hartman

Engineer: Bradley Hartman  
MCA MCAD-5693 (SPARS code not available) [86]

Total disc time: 33:45

Music stores were quick to label the MCA Master Series "New Age," mostly due to the packaging. But Albert Lee's *Speechless* quickly lays to waste any notion of a New Age stereotype. From the first passages of "T-Bird to Vegas" it's obvious that there's little snoozing allowed on this musical joyride.

Albert Lee himself has come a long way, having played guitar along with such talents as Jerry Lee Lewis, Eric Clapton, and Joan Armatrading, to name a few. On *Speechless*, however, folk and bluegrass influences dominate, with a nod to jazz for hooks and twists. Two of the tunes ("Salt Creek" and "Arkansas Traveler") are even arrangements of traditional folk melodies.

It's hard to sit still listening to this disc, at least until Lee himself takes a breather. His performance, along with the excellent support provided by the other musicians, demands both attention and reaction. Foot-tapping is too trivial; *Speechless* calls for some good, old-fashioned floor-stomping.

There are some detours (and a few concessions to New Age styling on "Seventeenth Summer" and "Rosemary Rye"), but Lee makes the listener earn such reprieves. Besides, a disc that keeps up the pace he sets at the start is liable to melt in the player before too long.

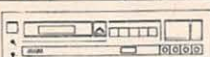
Things do cool down considerably by the end of the trip. The piano solo "Erin" closes out as a satisfying farewell, but it still leaves you expecting something more.

*Speechless* is, for the most part, a thrill-seeker's delight—a rugged road trip through some of the most lively music around. It's a short trip though, proof that when you speed down the road, you're bound to get where you're going ahead of schedule.

Hugh Coyle

\$400-  
\$700

# SPEAKERS



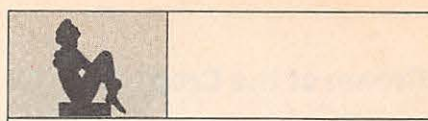
MANUFACTURER

MODEL

MANUFACTURER	MODEL	FREQUENCY RESPONSE (-3 dB unless noted)	MINIMUM CONTINUOUS RECOMMENDED POWER (watts)	MAXIMUM CONTINUOUS RECOMMENDED POWER (watts)	SENSITIVITY (dB SPL/1 watt/1 meter)	NOMINAL IMPEDANCE (ohms)
JAMO HI-FI	Digital 70	40 Hz-20 kHz	X	70	89	8
MAGNAT	Monitor C	35 Hz-34 kHz	15	90	88	4-8
SOUND DYNAMICS BY API	SDM Monitor 1	35 Hz-22 kHz	10	100	96	8
TECHNICS	SB-RX30	44 Hz-30 kHz	X	120	88	6
TECHNICS	SB-RX50	30 Hz-48 kHz	X	150	87	6
TECHNICS	SB-X500A	30 Hz-33 kHz	X	130	90	8
CERWIN-VEGA	D-2	30 Hz-20 kHz, +4 dB	5	125	94	8
BOSE	4.2	X	10	75	X	8
ADS	L400	60 Hz-20 kHz	10	100	90	4
KLIPSCH & ASSOCIATES	KG2	35 Hz-20 kHz	30	65	90.5	4
PHASE TECHNOLOGY	PC 60	55 Hz-20 kHz	15	200	87	4
BOSE	301 Series II	X	10	75	X	8
JBL	L20T	X	10	100	87	8
EPI	T/E Monitor I	40 Hz-20 kHz	10	250	92	6
TECHNICS	SB-L55	37 Hz-22 kHz	X	120	92	8
CAMBER ACOUSTICS	2.5	45 Hz-20 kHz, +2 dB	10	X	90	8
AMERICAN ACOUSTICS	D4500	45 Hz-22 kHz	X	78	95.5	4-8
AUDIO PULSE BY API	500DM	35 Hz-20 kHz	10	100	96	8
BOSTON ACOUSTICS	T830	45 Hz-20 kHz	15	75	90	8
DB PLUS	880	35 Hz-22 kHz	10	100	96	8
JBL	JBL630	X	10	150	93	4
SNELL ACOUSTICS	Type K	70 Hz-20 kHz, +2.5 dB	10	100	90	8
SPICA	TC-50	56 Hz-15 kHz	25	100	83	4
ADS	L570 Series 2	46 Hz-20 kHz	15	100	88	8
MAGNAT	Monitor D	30 Hz-34 kHz	15	100	88	4-8
CERWIN-VEGA	240SE	32 Hz-20 kHz	5	125	95	6
PHASE TECHNOLOGY	745ES	35 Hz-20 kHz	15	120	93	4
CANTON	Fonum 60	28 Hz-30 kHz, +6 dB	X	65	89.8	8
PARADIGM	7se	35 Hz-20 kHz, +2 dB	15	150	92	8
ALLISON ACOUSTICS	CD 6	X	15	150	90	4
KEF	C-40	58 Hz-20 kHz	10	150	91	8
3D ACOUSTICS	Column	35 Hz-20 kHz	25	150	88	8
POLK AUDIO	Monitor 7C	24 Hz-26 kHz	10	150	91	4
FANFARE ACOUSTICS	Tempo II	38 Hz-22 kHz, +2 dB	20	X	90	6
JPW LOUDSPEAKERS	AP3	55 Hz-20 kHz	10	100	88	8
ALLISON ACOUSTICS	CD 7	X	15	150	90	4
ALTEC LANSING	201	33 Hz-22 kHz	X	150	91	6
AUDIO PULSE BY API	1235	30 Hz-20 kHz	15	75	91	6
EPI	T/E 320 II	38 Hz-20 kHz	15	250	88	6
EPI	Magnus A12	35 Hz-20 kHz	10	150	93	4
MAGNAT	All-Ribbon 4	33 Hz-34 kHz	15	90	87	4-8
MIRAGE ACOUSTICS	550	49 Hz-20 kHz	15	120	90	6
SOUND DYNAMICS BY API	500 CM	34 Hz-23 kHz	10	200	98.5	8
SOUND DYNAMICS BY API	SDM Monitor 2	30 Hz-22 kHz	15	112.5	97	8
SPL	2000	35 Hz-22 kHz	10	100	95	6
AUDIO PULSE BY API	800 TM	30 Hz-20 kHz	15	75	94	6
INN LOUDSPEAKERS	Kan	70 Hz-20 kHz	15	50	86	8
SCAN-SPEAK	SD 18	42 Hz-22 kHz	40	80	91	8
CERWIN-VEGA	D-3	30 Hz-20 kHz, +4 dB	5	125	94	8
MAGNAPAN	Magnaplanar SMGa	50 Hz-18 kHz	40	200	90	4
AUDIO PRO	B3-40	43 Hz-20 kHz	25	X	92	X
BANG & OLUFSEN	RL 80.2	42 Hz-20 kHz +4, -8 dB	10	60	93	8
DAHLQUIST	905	X	20	120	X	8
DB PLUS	990	30 Hz-22 kHz	10	100	98	8
CANTON	Karat 100	36 Hz-30 kHz, +6 dB	X	50	89.9	8
TECHNICS	SB-L75	33 Hz-22 kHz	X	150	92	8
TECHNICS	SB-X700A	35 Hz-30 kHz	X	180	90	8
AUDIO PULSE BY API	1000 DM	32 Hz-20 kHz	15	100	97	8
CANTON	Fonum 90	25 Hz-30 kHz, +6 dB	X	80	90.2	8
PRES SPEAKERS	Mini Superior	45 Hz-22 kHz	20	200	90	8
B & W LOUDSPEAKERS	DM220	53 Hz-20 kHz	10	75	90	8
KINDEL AUDIO	P-200 MKII	40 Hz-20 kHz	20	150	90	4
JBL	JBL830	X	10	200	94	4
JBL	L60T	X	10	120	88	8
JBL	18 TI	X	10	200	88	8
KLIPSCH & ASSOCIATES	KG4	38 Hz-20 kHz	30	100	94	4
PHASE TECHNOLOGY	PC600	35 Hz-20 kHz	20	125	91	4
OHM ACOUSTICS	Walsh 1	48 Hz-18 kHz, +4 dB	20	90	87	8
BOSE	6.2	X	10	100	X	4
DBX	Soundfield 1000	45 Hz-20 kHz	20	250	91	4
ROGERS LOUDSPEAKERS	LS3/5A	70 Hz-20 kHz	25	75	95	15
ROGERS LOUDSPEAKERS	LS6	55 Hz-20 kHz, +2 dB	10	100	89	8
BANG & OLUFSEN	S80.2	50 Hz-22 kHz	20	80	92	8
BOSTON ACOUSTICS	A150 II	38 Hz-25 kHz	15	100	90	8
CERWIN-VEGA	250SE	32 Hz-20 kHz	5	125	95	6
EPI	T/E Monitor II	35 Hz-20 kHz	10	275	93	6
JAMO HI-FI	Digital 90	35 Hz-20 kHz	X	90	90	8
MIRAGE ACOUSTICS	650	44 Hz-20 kHz	20	150	90	8
SOUND DYNAMICS BY API	SDM Monitor 3	25 Hz-22 kHz	20	125	98	8
TECHNICS	SB-R200	55 Hz-30 kHz	X	160	89	8
CERWIN-VEGA	D-5	32 Hz-20 kHz, +4 dB	5	150	96	8
MERLIN	1B	45 Hz-22 kHz	20	80	87	6
PARADIGM	9se	35 Hz-20 kHz, +2 dB	15	150	95	4
HARTLEY	H-200	35 Hz-25 kHz	5	100	X	8
POLK AUDIO	Monitor 10B	20 Hz-26 kHz	10	200	92	4
CAMBER ACOUSTICS	3.5	43 Hz-20 kHz, +2 dB	15	X	91	8
SCAN-SPEAK	SD 21	38 Hz-22 kHz	40	100	92	8
ADS	L780 Series 2	42 Hz-27 kHz	15	125	88	8
SNELL ACOUSTICS	Type J/II	49 Hz-22 kHz, +2 dB	15	150	92	8
CERWIN-VEGA	280SE	32 Hz-20 kHz	5	155	96	6
KEF	C-60	55 Hz-20 kHz	20	200	89	4
MAGNAT	All-Ribbon 6	28 Hz-34 kHz	15	100	89	8
CANTON	Fonum 150	25 Hz-30 kHz, +6 dB	X	90	90.9	8
AMERICAN ACOUSTICS	D5500	43 Hz-22 kHz	X	116	96.5	4-8



DESIGN PRINCIPLE	WOOFER DIAMETER (inches)	MIDRANGE DIAMETER TYPE	TWEETER DIAMETER TYPE	CROSSOVER FREQUENCIES	DIMENSIONS (nearest inch)	WEIGHT (lbs.)	SUGGESTED RETAIL PRICE
Bass Reflex	5.5	3 in./cone	1 in./dome	1200 Hz, 4.6 kHz	19 x 10 x 6	15.4	400.00
Infinite Baffle	8	4 in./cone	1 in./dome	800 Hz, 2 kHz	23 x 15 x 14	22	400.00
Bass Reflex	8	5 in.	1 in./horn	X	23 x 12 x 9	29	400.00
Coaxial Flat	9	none	1.1 in./flat	2.5 kHz	15 x 10 x 9	16.5	400.00
Coaxial Flat	9.5	none	1.1 in./flat	2.2 kHz	19 x 12 x 11	36.4	400.00
Bass Reflex	10	3.1 in./cone	1.1 in./cone	900 Hz, 2.5 kHz	25 x 14 x 13	33	400.00
Ported	10	none	1 in./horn	3 kHz	24 x 14 x 10	35.5	410.00
Ported	8	none	2.5 in./cone	2.2 kHz	10 x 18 x 10	15	419.00
Acoustic Suspension	7	none	1 in./dome	2 kHz	12 x 8 x 8	11	420.00
Passive Radiation	8	none	1 in./dome	1.8 kHz	19 x 13 x 12	28	420.00
Acoustic Suspension	6	none	1 in./dome	1.2 kHz	14 x 8 x 8	15	420.00
Ported	8	none	3 in./cones (2)	1.5 kHz, 2.5 kHz	11 x 17 x 10	18.5	422.00
Ducted Port	6.5	none	1 in./dome	3 kHz	16 x 10 x 9	38	430.00
Vented	10	6 in./cone	1 in./horn	500 Hz, 5 kHz	31 x 12 x 9	30	440.00
Bass Reflex	10	4 in./cone	2.1 in./cone	2.5 kHz, 5 kHz	25 x 13 x 10	18.7	440.00
Ported	6.5	none	1 in./dome	3 kHz	24 x 11 x 10	30	449.00
Vented	10	5 in./dome	1 in./horn	2.7 kHz, 6 kHz	24 x 15 x 10	34	450.00
Bass Reflex	12	4.5 in./cone	3 in./cone	2 kHz, 5 kHz	26 x 15 x 12	30	450.00
Acoustic Suspension	8	3.5 in./cone	1 in./dome	600 Hz, 3 kHz	29 x 10 x 11	40	450.00
Bass Reflex	10	none	1 in./dome	2.2 kHz	24 x 12 x 12	29	450.00
Ducted Port	6.5	none	1 in./dome	200 Hz, 2500 Hz	37 x 15 x 8	40	450.00
Infinite Baffle	8	none	0.75 in./dome	2.3 kHz	18 x 11 x 9	26	450.00
Sealed	6.5	none	1 in./cone	2.7 kHz	16 x 13 x 12	20	450.00
Acoustic Suspension	8	none	1 in./dome	1.8 kHz	20 x 12 x 11	25	460.00
Infinite Baffle	10	4 in./cone	1 in./dome	700 Hz, 2 kHz	25 x 17 x 16	31	460.00
Ported	10	none	1 in./dome	3 kHz	25 x 13 x 12	36	470.00
Acoustic Suspension	8	6.5 in./cone	1 in./dome	100 Hz, 1.7 kHz	35 x 10 x 12	42	475.00
Acoustic Suspension	8	1.25 in./dome	0.75 in./dome	900 Hz, 4.5 kHz	15 x 10 x 9	12	479.00
Bass Reflex	8	none	1 in./dome	2.5 kHz	24 x 11 x 12	28	480.00
Acoustic Suspension	8	none	1 in./cone	2 kHz	11 x 11 x 11	17	490.00
Acoustic Suspension	8	8 in./cone	1 in./dome	X	26 x 10 x 11	21	490.00
Passive Radiator	10, 6	none	1 in./dome	60 Hz, 2.2 kHz	31 x 12 x 11	42	490.00
Passive Radiator	10	6.5 in./cone	1 in./dome	60 Hz, 3 kHz	24 x 14 x 9	36	498.00
Acoustic Suspension	6.5	6.5 in./cone	1 in./dome	400 Hz, 3.5 kHz	24 x 12 x 11	38	499.00
Infinite Baffle	8	none	0.75 in./dome	3.2 kHz	21 x 10 x 12	26.7	499.00
Acoustic Suspension	8	none	1 in./cone	2 kHz	28 x 10 x 10	22	500.00
Acoustic Suspension	8	none	1 in./dome	2.5 kHz	22 x 12 x 9	43	500.00
Bass Reflex	12	4.5 in./cone	1.75 in./cone	2 kHz, 5 kHz	26 x 15 x 11	30	500.00
Infinite Baffle	10	4 in./cone	1 in./dome	300 Hz, 2.5 kHz	35 x 13 x 10	32	500.00
Bass Reflex	12	6 in./cone	1 in./horn	500 Hz, 4 kHz	26 x 16 x 12	X	500.00
Infinite Baffle	8	2 in./dome	1 in./dome	800 Hz, 2.5 kHz	20 x 11 x 10	29	500.00
Acoustic Suspension	10	none	1 in./dome	4 kHz	32 x 12 x 9	43	500.00
Bass Reflex	10	none	1 in./dome	2 kHz	23 x 12 x 12	38	500.00
Bass Reflex	10	5 in.	1 in./horn	X	24 x 14 x 9	29	500.00
Passive Radiator	8	none	1 in./dome	2.2 kHz	32 x 12 x 9	33	500.00
Passive Radiator	8	4.5 in./cone	1.75 in./cone	2 kHz, 7 kHz	33 x 13 x 9	25	520.00
Infinite Baffle	5	none	0.75 in./dome	3 kHz	12 x 8 x 6	11	525.00
Infinite Baffle	6	none	0.75 in./dome	X	22 x 10 x 10	28	525.00
Ported	10	6 in./cone	1 in./horn	700 Hz, 3.5 kHz	27 x 14 x 11	39	530.00
Planar/Magnetic	370	N/A	48 sq. in./planar	2.4 kHz	48 x 19 x 2	25	535.00
Passive Radiator	(2) 8	none	1 in./dome	2 kHz	24 x 12 x 11	27.5	549.00
Bass Reflex	(2) 5	none	1 in./dome	25 kHz	21 x 16 x 7	24	550.00
X	8	none	1 in./dome	2.5 kHz	X	X	550.00
Passive Radiator	10	none	1 in./dome	2.2 kHz	33 x 13 x 12	37	550.00
Acoustic Suspension	8	1.25 in./dome	0.75 in./dome	900 Hz, 3.6 kHz	14 x 9 x 9	14	550.00
Bass Reflex	12	4 in./cone	2.1 in./cone	2.5 kHz, 5 kHz	27 x 14 x 13	23.8	550.00
Bass Reflex	12	3.1 in./cone	1.1 in./cone	900 Hz, 2.5 kHz	27 x 15 x 13	39.6	550.00
Passive Radiator	10	4.5 in./cone	3 in./cone	2 kHz, 5 kHz	37 x 14 x 12	40	560.00
Acoustic Suspension	9	1.25 in./dome	1 in./dome	900 Hz, 4.5 kHz	17 x 12 x 10	17	569.00
Bass Reflex	6.5	none	0.75 in./dome	X	16 x 10 x 7	18	575.00
Acoustic Suspension	(2) 10	none	1 in./dome	3 kHz	27 x 12 x 13	33	578.00
Acoustic Suspension	(2) 6.5	2.25 in./cone	0.75 in./dome	300 Hz, 1.5, 8 kHz	24 x 10 x 10	30	585.00
Ducted Port	(2) 8	none	1 in./dome	200 Hz, 2500 Hz	40 x 17 x 9	53	590.00
Ducted Port	8	none	1 in./dome	2.5 kHz	31 x 12 x 10	40	590.00
Ducted Port	6.5	none	1 in./dome	3 kHz	15 x 9 x 7	17.5	590.00
Passive Radiator	(2) 8	none	1 in./horn	1.8 kHz	24 x 16 x 11	40	590.00
Acoustic Suspension	8	none	1 in./dome	1.4 kHz	31 x 12 x 8	42	590.00
Vented	8	none	dome	X	X	25	595.00
Ported	8	none	3 in./cones (2)	2.2 kHz, 6 kHz	10 x 20 x 10	19.5	599.00
Vented	8	4 in./cone	(2) 0.75 in./domes	450 Hz, 3.1, 5 kHz	31 x 14 x 11	35	599.00
Infinite Baffle	5	none	0.75 in./dome	3 kHz	12 x 8 x 6	12	599.00
Bass Reflex	8	none	0.75 in./dome	4 kHz	20 x 11 x 11	21	599.00
Acoustic Suspension	8	dome	1 in./dome	700 Hz, 2.5 kHz	21 x 12 x 10	24	600.00
Acoustic Suspension	10	3.5 in./cone	1 in./dome	650 Hz, 3 kHz	33 x 16 x 8	47	600.00
Ported	10	6 in./cone	1 in./dome	550 Hz, 3.5 kHz	28 x 13 x 12	41	600.00
Vented	(2) 10	6 in./cone	1 in./horn	500 Hz, 5 kHz	37 x 14 x 11	43	600.00
Bass Reflex	6.5	4 in./cone	1 in./dome	960 Hz, 5 kHz	24 x 12 x 10	24	600.00
Passive Radiator	10	none	1 in./dome	4 kHz	32 x 12 x 9	44	600.00
Bass Reflex	12	5 in.	1 in./horn	X	26 x 15 x 12	33	600.00
Flat Coaxial	none	none	Flat Coax	2.7 kHz	26 x 15 x 4	19.8	600.00
Ported	12	6 in./cone	1 in./horn	700 Hz, 3.5 kHz	28 x 16 x 11	44	630.00
Bass Reflex	6.5	none	1.25 in./dome	2730 Hz	37 x 11 x 11	37	630.00
Bass Reflex	(2) 8	none	1 in./dome	2 kHz	28 x 12 x 14	38	640.00
Aligned air column	10	2.5 in./column	1 in./dome	2600 Hz	30 x 15 x 15	X	649.95
Passive Radiator	10	6.5 in./cones (2)	1 in./dome	60 Hz, 3 kHz	28 x 16 x 12	50	658.00
Ported	8	none	1 in./dome	3 kHz	24 x 13 x 10	45	669.00
Infinite Baffle	8	4 in./cone	0.75 in./dome	X	27 x 12 x 11	40	675.00
Acoustic Suspension	8.25	1.5 in./dome	0.75 in./dome	650 Hz, 5 kHz	21 x 12 x 11	32	680.00
Bass Reflex	8	none	1 in./dome	2.3 kHz	23 x 13 x 10	38	680.00
Ported	12	6 in./cone	1 in./dome	550 Hz, 3.5 kHz	26 x 15 x 12	44	690.00
Conjugate Load	8	none	1 in./dome	X	19 x 10 x 13	27	690.00
Infinite Baffle	10	2 in./dome	1 in./dome	600 Hz, 2.5 kHz	23 x 12 x 11	37	690.00
Acoustic Suspension	8.5	2 in./dome	1 in./dome	800 Hz, 3.5 kHz	20 x 12 x 11	28	699.00
Vented	12	5 in./dome	3 in./cone, 1 horn	1.7, 6, 15 kHz	27 x 16 x 10	40	700.00



## John Jarvis:

### So Fa So Good

Producers: John Jarvis, Ray Kennedy

Engineer: Ray Kennedy

MCA MCAD-5690 (SPARS code not available) (86)

Total disc time: 37:54

The photo on the back of this disc sums up John Jarvis well—here we see Papa Jarvis at the piano, playing away, while his son Paul beams back at us from atop his shoulders. The playful intensity of *So Fa So Good*, the down-right "human feel" to some of the material here, is ultimately endearing. John even dedicates the music to his own mom and dad.

But this disc is not sentimental mush to be stashed away for that special romantic occasion. Jarvis is a musical Renaissance man who dabbles in the realm of the mind as well as the heart. When he's not being down-to-earth on the piano, he's being up-to-date on the synthesizer and in the ensemble.

But Jarvis is best on his own. The human feeling never quite catches up to the computer-set tempo on such pieces as "Long Awaited, Never Delivered." Alone at the piano, Jarvis is freed from predetermined arrangements. He can throw in a surprise or two, like the glissando in "Framed in a Still Picture" or the hesitation in "Homecoming."

These piano pieces are also the technical highlights of the disc in terms of both playing and production. The MCA Master Series goes to some length to outline the recording equipment used. But only the solos have a truly clean sound. On the ensemble pieces a slight hiss arises, ironic in light of all the digital doodads being used. Beyond that, though, the reproduction is quite crisp.

The ultimate appeal of *So Fa So Good* lies in its diversity and its humanity. Art meets technology in a back-and-forth affair which should please old-style and new-age jazz fans. Even the kids will like this disc. And when anyone plays to the child in my own heart, I'm all ears. It's me in that picture, and Dad can play as long as he wants.

Hugh Coyle



## Cream of the Crop

Continued from p. 77

Wagner: Tannhauser (Overture); Rienzi (Overture); Lohengrin (Preludes to acts I & II); Die Meistersinger von Nürnberg/Berlin Philharmonic, Klaus Tennstedt; ANG CDC 47030-2 (DDD)

## CLASSICAL COLLECTIONS

Brahms: Four Ballades Op. 10/Schubert: Piano Sonata in a Minor D 537/Arturo Benedetti Michelangeli; DGG 400 043-2 GH (DDD) 9/84

French Ballet Music of the 1920s: L'Éventail de Jeanne; Les Mariés de la Tour Eiffel/Philharmonia Orchestra, Geoffrey Simon; CHA 8356 (DDD) 3/86

Grofe: Grand Canyon Suite/Gershwin/Bennett: Porgy and Bess (Symphonic Picture)/Detroit Symphony Orchestra, Antal Dorati; LON 410 110-2 LH (DDD) 1/86

Jongen: Symphonie Concertante for Organ & Orchestra/Franck: Fantasy in A Major; Pastoral/San Francisco Symphony, Edo De Waart; TLC CD-80096 (DDD) 12/85

Mozart: Quintet for Piano and Winds in E-flat Major K 452/Beethoven: Quintet for Piano and Winds in E-flat Major Op. 16/Andre Previn; TLC CD-80114 (DDD) 5/86

The Romantic Trombone/Ropartz: Piece in E-flat Minor/Mercadante: Salve Maria/Saint-Saens: Cavatina Op. 144/Gaubert: Morceau Symphonique/Jongen: Aria and Polonaise Op. 128/Stojowski: Fantasia/Alfven: Valflickans Dans/Weber: Romance; BIS CD-298 (DDD) 10/86

Saint-Saens: Symphony No. 3/Widor: Allegro from Symphony No. 6 for Organ/San Francisco Symphony, Edo de Waart; PHI 412 619-2 PH (DDD) 3/86

## Untangling the Technical Terminology

Continued from p. 97

**Circumaural**—A headphone design in which the foam or vinyl pads surround the ear, and do not rest upon it. The circumaural design is usually associated with a closed headphone.

**Class (of Operation)**—A basic choice in the design of audio amplifiers. It refers to the way an amplification device (transistor, tube, etc.) is utilized, and the circuit configuration in which it is placed (see Insider Digital, Digital Audio, January 1987).

**Class A**—An amplifier circuit design in which the audio signal is offset so that it lies in the transistors' most efficient range. The benefit of the Class A design is its low distortion. Drawbacks are its relative inefficiency and high heat output.

\$700-  
\$1000

## SPEAKERS



MANUFACTURER

MODEL

FREQUENCY RESPONSE  
(±3 dB unless noted)

MINIMUM CONTINUOUS  
RECOMMENDED POWER  
(watts)

MAXIMUM CONTINUOUS  
RECOMMENDED POWER  
(watts)

SENSITIVITY  
(dB SPL/1 watt/1 meter)

AUDIO PULSE BY API	1500 DM	28 Hz-22 kHz	20	125	98	8
AUDIO PULSE BY API	1200 TM	30 Hz-20 kHz	15	125	96	6
EPI	Magnus A24	33 Hz-20 kHz	10	175	93	4
MIRAGE ACOUSTICS	750	39 Hz-20 kHz	25	200	91	8
SOUND DYNAMICS BY API	700 CM	32 Hz-23 kHz	15	200	101	8
SPL	3000	30 Hz-22 kHz	15	125	96.5	6
CANTON	Karat 200	28 Hz-30 kHz, +6 dB	X	70	90.2	8
B & W LOUDSPEAKERS	DM330	48 Hz-20 kHz	10	100	91	8
ENERGY BY API	22 Pro Monitor	28 Hz-20 kHz, +1.5 dB	20	200	86	8
ALTEC LANSING	301	30 Hz-22 kHz	X	200	93	8
BANG & OLUFSEN	RL 140	40 Hz-20 kHz, +4, -8 dB	10	X	93	8
BOSE	501 Series IV	X	20	125	X	8
DAHLQUIST	907	X	20	120	X	8
DB PLUS	1010	25 Hz-22 kHz	20	150	100	8
B & W LOUDSPEAKERS	DM1200	85 Hz-20 kHz, +2 dB	30	protected	85	8
SCAN-SPEAK	SD 25	33 Hz-22 kHz	50	120	94	8
ALLISON ACOUSTICS	CD 9	X	30	200	90	4
CERWIN-VEGA	D-7	25 Hz-20 kHz, +4 dB	5	200	98	8
JBL	JBL940	X	10	300	94	4
KEF	Reference 102	65 Hz-20 kHz, +2 dB	50	200	92	4
MAGNAT	MSP 100	41 Hz-27 kHz	20	100	87	4
POLK AUDIO	SDA-CRS Plus	22 Hz-26 kHz	10	250	91	4
POLK AUDIO	Monitor 11A	18 Hz-26 kHz, +3.5 dB	10	200	92	6
ROGERS LOUDSPEAKERS	LS7	50 Hz-18 kHz, +2 dB	10	200	88	8
CERWIN-VEGA	2000-10	29 Hz-20 kHz, +2.5 dB	5	125	94	8
JAMO HI-FI	Digital 120	30 Hz-22 kHz	X	120	91.2	8
KLIPSCH & ASSOCIATES	Heresy II	50 Hz-20 kHz	20	100	96	8
PRES SPEAKERS	Classic II	40 Hz-22 kHz	20	200	89	8
ADS	L880 Series 2	40 Hz-27 kHz	15	200	89	8
JBL	L80T	X	10	150	90	8
MAGNAPAN	Magnaplanar MG-1c	45 Hz-18 kHz	40	200	85	4
CANTON	Fonum 200	22 Hz-30 kHz, +6 dB	X	100	91.5	8
DBX	Soundfield 100	40 Hz-20 kHz	20	250	91	4
B & W LOUDSPEAKERS	DM17 Limited	85 Hz-20 kHz, +2 dB	40	protected	85	8
BOSTON ACOUSTICS	A400	38 Hz-25 kHz	15	100	88	4
CANTON	Karat 300	25 Hz-30 kHz, +6 dB	X	90	91.2	8
CERWIN-VEGA	300SE	25 Hz-20 kHz	5	255	98	6
ENERGY BY API	22 Pro Mon. Des.	28 Hz-20 kHz, +1.5 dB	20	200	86	8
MERLIN	2B	33 Hz-32 kHz	20	150	89	6
PHASE TECHNOLOGY	PC800	30 Hz-20 kHz	20	150	91	4
SOUND DYNAMICS BY API	1500 CM	38 Hz-23 kHz	20	250	102	8
SPL	4000	25 Hz-22 kHz	20	150	98	6
ENERGY BY API	22 Reference Mon.	34 Hz-20 kHz, +1.5 dB	20	200	86	8
BOSE	8.2	X	10	120	X	4
CERWIN-VEGA	D-9	29 Hz-20 kHz, +4 dB	5	350	101	4
MAGNAT	All-Ribbon 8P	26 Hz-34 kHz	15	120	89	8
SHAHINIAN ACOUSTICS	Arc	28 Hz-18 kHz	30	X	88	6
THEIL AUDIO	CS 1	55 Hz-20 kHz	40	150	87	6
POLK AUDIO	RTA 12C	17 Hz-26 kHz	10	500	92	4
ALTEC LANSING	401	25 Hz-22 kHz	X	250	93	8
AMERICAN ACOUSTICS	D8500	37 Hz-22 kHz	X	205	98.5	4-8
DAHLQUIST	DOM-9 compact	35 Hz-22 kHz	25	140	92	8
SNELL ACOUSTICS	Type E/II	39 Hz-22 kHz, +1.75 dB	15	150	93	8
OHM ACOUSTICS	Walsh 2	45 Hz-16 kHz, +4 dB	30	120	89	4
B & W LOUDSPEAKERS	Matrix 1	80 Hz-25 kHz, +2 dB	25	protected	85	4
POLK AUDIO	SDA-2A	15 Hz-26 kHz	10	500	91	4
HARTLEY	H-300	30 Hz-22 kHz, +4 dB	5	150	X	4
AMERICAN ACOUSTICS	D9500	32 Hz-22 kHz	X	205	99.5	4-8
BOSTON ACOUSTICS	T1000	38 Hz-25 kHz	15	150	90	8
TECHNICS	SB-M3	150 Hz-15 kHz ±1.5	X	X	90	6

\$10-  
\$25

## HEADPHONES



MANUFACTURER

MODEL

TYPE

FREQUENCY RESPONSE

KOSS	KFF/100	Samarium cobalt	40 Hz-16 kHz
KOSS	KC/10	Samarium cobalt	40 Hz-12 kHz
RECOTON	ST-92	Dynamic, open	20 Hz-20 kHz
AZDEN	DSR-69	Dynamic, open	40 Hz-20 kHz
KOSS	KFF/200	Samarium cobalt	20 Hz-20 kHz
KOSS	KC/19	Samarium cobalt	20 Hz-17 kHz
RECOTON	ST-99	Dynamic, supra-aural	20 Hz-22 kHz
RECOTON	ST-98	Dynamic, supra-aural	50 Hz-22 kHz
RECOTON	ST-90	Dynamic, open	20 Hz-20 kHz
KOSS	KFF/300	Samarium cobalt	20 Hz-20 kHz
KOSS	KC/24	Samarium cobalt	20 Hz-17 kHz
RECOTON	ST-94	Dynamic, open	20 Hz-22 kHz
RECOTON	ST-100	Dynamic, supra-aural	20 Hz-20 kHz
RECOTON	ST-102	Dynamic, supra-aural	50 Hz-20 kHz
KOSS	KC/29	Samarium cobalt	18 Hz-20 kHz
KOSS	KSP/1	Samarium cobalt	20 Hz-20 kHz
LABTEC	LT-120	23mm samarium cobalt	18 Hz-20 kHz
LABTEC	LT-111	40mm mylar cone	20 Hz-20 kHz
STANTON	ST-1	Dynamic, open	25 Hz-20 kHz



DESIGN PRINCIPLE	WOOFER DIAMETER (inches)	MIDRANGE DIAMETER TYPE	TWEETER DIAMETER TYPE	CROSSOVER FREQUENCIES	DIMENSIONS (nearest inch)	WEIGHT (lbs.)	SUGGESTED RETAIL PRICE
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Passive Radiator	12	4.5 in./cone	3 in./cone	1.2 kHz, 5 kHz	40 x 15 x 12	43	700.00
Passive Radiator	12	4.5 in./cone	1.75 in./cone	2 kHz, 5 kHz	39 x 15 x 11	37	700.00
Bass Reflex	(2) 12	6 in./cone	1 in./horn	500 Hz, 4 kHz	41 x 17 x 11	X	700.00
Acoustic Suspension	10	5.25 in./cone	0.75 in./dome	300 Hz, 5 kHz	32 x 12 x 9	44	700.00
Bass Reflex	12	none	1 in./dome	1.9 kHz	28 x 14 x 12	45	700.00
Bass Reflex	(2) 8	none	1 in./dome	2.2 kHz	37 x 16 x 12	52	700.00
Acoustic Suspension	9	1.25 in./dome	0.75 in./dome	900 Hz, 3.6 kHz	17 x 11 x 10	20	725.00
Acoustic Suspension	(2) 8	none	1 in./dome	3 kHz	34 x 12 x 13	37.5	738.00
Bass Reflex	7	none	1.5 in./dome	1.5 kHz	25 x 12 x 11	34	740.00
Acoustic Suspension	10	2 in./dome	1 in./dome	550 Hz, 3.5 kHz	27 x 15 x 12	47	750.00
Bass Reflex	(2) 6.5	5 in./cone	1 in./dome	800 Hz, 3 kHz	28 x 20 x 9	43	750.00
Ported	10	none	3 in./cones (2)	1.5 kHz, 2.5 kHz	25 x 16 x 14	40	750.00
X	8	4.5 in./cone	1 in./dome	400 Hz, 3.5 kHz	X	X	750.00
Bass Reflex	(2) 10	none	1 in./dome	2 kHz	37 x 13 x 12	45	750.00
Acoustic Suspension	6	none	1 in./dome	3 kHz	14 x 11 x 9	21	770.00
Infinite Baffle	10	4 in./cone	0.75 in./dome	X	32 x 13 x 12	50	780.00
Acoustic Suspension	8	3.5 in./cone	1 in./cone	450 Hz, 3.75 kHz	29 x 11 x 11	35.5	790.00
Ported	12	6 in./cones (2)	1 in./horn	500 Hz, 3.5 kHz	28 x 16 x 11	70	790.00
Ducted Port	8, 10	5 in./cone	1 in./dome	200, 800 Hz, 4 kHz	44 x 19 x 10	65	790.00
Conjugate Load	6	none	1 in./dome	X	13 x 8 x 10	15	790.00
Infinite Baffle	8	2 in./dome	1 in./dome	850 Hz, 5.5 kHz	20 x 12 x 10	37	790.00
Passive Radiator	10	6.5 in./cones (2)	1 in./dome	50 Hz, 2.5 kHz	30 x 20 x 10	38	790.00
Passive Radiator	10	6.5 in./cones (2)	1 in./dome	60 Hz, 3 kHz	34 x 16 x 12	60	798.00
Bass Reflex	8	none	1 in./dome	3 kHz	22 x 11 x 11	30	799.00
Ported	10	6 in./cones (2)	1 in./dome	250 Hz, 3.5 kHz	34 x 16 x 11	55	800.00
Bass Reflex	8	4 in./cone	1 in./dome	820 Hz, 4.9 kHz	28 x 14 x 12	37.5	800.00
Infinite Baffle	12	1.5 in./horn	1 in./horn	700 Hz, 6 kHz	21 x 16 x 13	50	830.00
Acoustic Suspension	8	none	0.75 in./dome	X	20 x 10 x 12	28	849.00
Acoustic Suspension	10	2 in./dome	0.75 in./dome	55 Hz, 5 kHz	23 x 13 x 12	41	850.00
Ducted Port	10	5 in./cone	1 in./dome	800 Hz, 4.5 kHz	34 x 14 x 12	58	850.00
Planar/Magnetic	428	N/A	68 sq. in./planar	1.5 kHz	60 x 22 x 2	35	875.00
Acoustic Suspension	10	2 in./dome	1 in./dome	800 Hz, 3.5 kHz	22 x 14 x 13	36	899.00
Vented	10	4 in./cone	(3) 0.75 in./domes	450 Hz, 3.1, 5 kHz	32 x 16 x 13	45	899.00
Acoustic Suspension	6	none	1 in./dome	3 kHz	16 x 11 x 9	20	900.00
Acoustic Suspension	(2) 8	6.5 in./cone	1 in./dome	300 Hz, 3 kHz	41 x 21 x 7	58	900.00
Acoustic Suspension	10	1.5 in./dome	1 in./dome	850 Hz, 4.2 kHz	20 x 12 x 12	31	900.00
Ported	12	7 in./cone	1 in./dome	250 Hz, 3.5 kHz	32 x 15 x 16	65	900.00
Bass Reflex	7	none	1.5 in./dome	1.5 kHz	25 x 12 x 11	39	900.00
Bass Reflex	8	none	1.25 in./dome	1765 Hz	42 x 12 x 12	49	900.00
Acoustic Suspension	10	5.25 in./piston	1 in./dome	200 Hz, 2 kHz	36 x 15 x 9	57	900.00
Bass Reflex	15	none	1 in./dome	1.8 kHz	35 x 18 x 16	90	900.00
Bass Reflex	(2) 10	none	1 in./dome	2.2 kHz	43 x 16 x 13	65	900.00
Bass Reflex	7	none	1.5 in./dome	1.5 kHz	25 x 12 x 11	34	940.00
Ported	10	none	3 in./cones (2)	1.2, 3, 4 kHz	33 x 16 x 9	41	949.00
Ported	15	6 in./cones (2)	1 in./horn	500 Hz, 3.5 kHz	36 x 18 x 18	85	950.00
Tuned Port	10	2 in./dome	1 in./dome	450 Hz, 4.5 kHz	23 x 14 x 12	44	950.00
Passive Radiator	8	1.38 in./dome	1 in./dome	1.8 kHz, 9 kHz	28 x 14 x 10	45	950.00
Bass Reflex	6.5	none	1 in./dome	3 kHz	36 x 10 x 10	41	950.00
Passive Radiator	12	6.5 in./cones (2)	1 in./dome	50 Hz, 2 kHz	39 x 16 x 12	75	958.00
Acoustic Suspension	12	2 in./dome	1 in./dome	550 Hz, 3.5 kHz	32 x 17 x 12	60	960.00
Vented	15	5 in./dome	1 in./dome	700 Hz, 5 kHz	30 x 19 x 15	63	980.00
Tuned Port	9	5 in./cone	1 in./dome	450 Hz, 3.5 kHz	22 x 14 x 11	55	980.00
Bass Reflex	8	none	1, 0.75 in./domes	2.3 kHz	33 x 14 x 11	48	990.00
Vented	8	none	dome	X	33 x 12 x 12	29	995.00
Acoustic Suspension	6	none	1 in./dome	X	16 x 9 x 12	22	998.00
Passive Radiator	12	6.5 in./cones (2)	1 in./dome	50 Hz, 2.5 kHz	40 x 16 x 12	70	998.00
Aligned air column	(2) 10	1.5 in./columns (4)	1 in./domes (2)	3400 Hz	43 x 15 x 15	X	999.95
Vented	12	5 in./domes (2)	3 in./cone, 1 horn	2, 6, 15 kHz	41 x 16 x 15	76	1000.00
Acoustic Suspension	(2) 8	6.5 in./cone	1 in./dome	400 Hz, 3 kHz	43 x 10 x 12	65	1000.00
Bass Reflex	13	3.1 in./cone	1 in./cone	450 Hz, 3.5 kHz	27 x 16 x 13	68.3	1000.00

IMPEDANCE (ohms)	WEIGHT (lbs.)	NOTES	SUGGESTED RETAIL PRICE
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35	2	1/4" and 1/8" jack	9.99
35	2.5	1/4" and 1/8" jack	9.99
32	1.4	1/4" and 1/8" plugs included	13.00
32	1.25	Standard, lightweight design	15.00
35	2.5	1/4" and 1/8" jack	15.99
35	3.5	1/4" and 1/8" jack	15.99
20	0.7	1/8" mini plug, for portables	16.00
32	0.2	1/8" mini plug, for portables	17.00
32	0.8	1/4" and 1/8" plugs included	18.00
35	3	Dual volume controls	19.99
35	3.5	Volume balance, 1/4" and 1/8" jack	19.99
32	1.2	1/4" and 1/8" plugs included	23.00
38	0.5	1/8" mini plug, for portables	23.00
32	0.5	Foldable, adaptor included	23.00
35	3.5	1/8" mono adaptor incl.	23.99
35	1.4	1/4" and 1/8" jack	24.95
32	X	1/4" and 1/8" jack	24.95
32	X	Padded headband + earcups	24.95
32	3.2	Vinyl padded earcups	24.95

**Class AB**—A compromise between the Class A and B circuits, this design both splits the audio signal into positive and negative segments and offsets those segments to a more efficient transistor range.

**Class B**—An amplifier circuit design in which the audio signal is split into positive and negative segments, each segment being amplified separately. The Class B design benefits from its high efficiency, but can suffer from greater distortion than other designs.

**Clipping**—Severe distortion occurring when the input signal demands more output power than the amplifier can give.

**Closed Headphones**—A headphone design that isolates the listener from outside noise. These provide listening without extraneous distraction, and often give a better bass response.

**Continuous Power**—A measure, in watts per channel RMS (Root Mean Square), of an amplifier's power capacity or capability when driven by pure tones over long periods of time. Remember that in order to get a discernable increase in loudness or clarity, you need an almost two-fold increase in power. This specification is meaningless unless stated at a specified distortion rating (THD).

**Crossover**—An electrical circuit designed to function as a frequency divider. In loudspeakers, the crossover networks send low frequencies to the woofer, middle frequencies to the midrange driver, and high frequencies to the tweeter. The crossover frequency is the point at which transitions are made from driver to driver.

**D/A converter**—A circuit that converts digital information to analog waveforms. Some CD players employ separate D/A converters for the left and right channels, while others use a single converter for both channels.

**DC**—An abbreviation of Direct Current. A constant current



(such as that from a battery) which flows in one direction only, i.e. positive or negative; unlike Alternating Current, which fluctuates from positive to negative.

**Decibel (dB)**—A logarithmic unit that measures a ratio between power, voltage, or current levels. Decibels can measure the strength of an audio signal.

**Direct-Coupled**—A circuit configuration in which elements are joined by a non-frequency-sensitive device such as a resistor or a wire. In some audio circuits, particularly amplifiers, direct-coupling is considered to be beneficial because it eliminates the capacitors conventionally used between stages, which could limit frequency response and induce phase errors.

**Dynamic Headroom**—A measurement, in decibels (dB), of an amplifier's ability to supply more than its rated maximum continuous power for very short periods of time. An amp with a Dynamic headroom of 3 dB, for example, can deliver twice its rated maximum power for a fraction of a second.

**Dynamic Range**—Expressed as a ratio and measured in decibels (dB), the range between the noise floor of a component and its maximum signal level capability. Generally, the higher the dynamic range, the better.

**Electret Transducer**—A variation on electrostatic designs in which a foil diaphragm, called an electret, is placed next to a metalized plate. The audio signal occurs between the diaphragm and the plate. This principle is widely used in microphone designs, and in some headphones.

**Electrostatic**—A loudspeaker or headphone design in which

For more information on the products and manufacturers listed in the **Buyer's Guide**, simply call Suzanne at (800) 722-7785, ext. 535.

\$25-  
\$99

## HEADPHONES



MANUFACTURER	MODEL	TYPE	FREQUENCY RESPONSE
AZDEN	DSR-64	Dynamic, open	30 Hz-20 kHz
RECOTON	ST-66	Dynamic, open	20 Hz-25 kHz
RECOTON	ST-101	Dynamic, open	20 Hz-20 kHz
RECOTON	ST-91	Dynamic, open	20 Hz-25 kHz
LABTEC	LT-121	40mm samarium cobalt	20 Hz-20 kHz
AUDIO-TECHNICA	Point 17	Dynamic, supra-aural	35 Hz-20 kHz
KOSS	K/6X Plus	Dynamic, closed	10 Hz-22 kHz
KOSS	SST/4	Dynamic, open	20 Hz-20 kHz
LABTEC	LT-125	40mm mylar cone	20 Hz-20 kHz
PARASOUND	LSH-1	Dynamic, open	50 Hz-18 kHz
PIONEER	SE-L22	Dynamic, open	16 Hz-22 kHz
PIONEER	SE-205	Dynamic, closed	20 Hz-20 kHz
STANTON	ST-2	Dynamic, open	20 Hz-20 kHz
AZDEN	DSR-28	Dynamic, open	30 Hz-20 kHz
RECOTON	ST-96	Dynamic, open	20 Hz-20 kHz
TECHNICS	EAH-T6	Samarium cobalt	20 Hz-20 kHz
KOSS	KSP/II	Samarium cobalt	20 Hz-20 kHz
AZDEN	DSR-30	Dynamic, open	30 Hz-20 kHz
KOSS	K/40LC Plus	Dynamic, closed	10 Hz-22 kHz
KOSS	SST/5	Dynamic, closed	20 Hz-20 kHz
PIONEER	SE-L44	Dynamic, open	16 Hz-22 kHz
SONY	MDR-E272	Dynamic, earbuds	12 Hz-24 kHz
STANTON	ST-3	Dynamic, open	20 Hz-20 kHz
YAMAHA	YHL-003	Dynamic, open	20 Hz-20 kHz
AKG	K-45	Dynamic, open	30 Hz-18 kHz
PICKERING	CD-2	Samarium cobalt	20 Hz-20 kHz
SENNHEISER	HD40	Dynamic, open	22 Hz-18 kHz
SENNHEISER	HD44	Dynamic, open	40 Hz-15 kHz
KOSS	HV/1A	Dynamic	15 Hz-30 kHz
KOSS	Porta Pro	Samarium cobalt	20 Hz-20 kHz
PIONEER	SE-L66	Dynamic, open	16 Hz-22 kHz
SIGNET	TK11	Dynamic, open	30 Hz-20 kHz
TECHNICS	EAH-T10	Samarium cobalt	15 Hz-20 kHz
YAMAHA	YHL-006	Dynamic, open	20 Hz-20 kHz
AUDIO-TECHNICA	ATH-18	Dynamic, closed	20 Hz-20 kHz
PIONEER	SE-50D	Dynamic, supra-aural	3 Hz-50 kHz
AKG	K-130	Dynamic, supra-aural	20 Hz-20 kHz
YAMAHA	YHD-2	Orthodyn., supra-aural	20 Hz-20 kHz
SENNHEISER	HD410-SL	Dynamic, open	20 Hz-18 kHz
KOSS	SST/6	Dynamic, open	15 Hz-20 kHz
KOSS	HV/XLC	Dynamic, open	15 Hz-35 kHz
AZDEN	DSR-68	Dynamic, open	20 Hz-22 kHz
BEYERDYNAMIC	DT320	Dynamic, supra-aural	20 Hz-20 kHz
PICKERING	CD-4	Samarium cobalt	20 Hz-20 kHz
AUDIO-TECHNICA	ATH-20	Dynamic, supra-aural	25 Hz-20 kHz
AKG	K-135	Dynamic, supra-aural	25 Hz-18 kHz
SIGNET	TK20	Dynamic, open	25 Hz-20 kHz
KOSS	SST/7	Dynamic, closed	15 Hz-30 kHz
KOSS	Pro/4AAA Plus	Dynamic, closed	10 Hz-22 kHz
AZDEN	DSR-60	Dynamic, supra-aural	15 Hz-26 kHz
AZDEN	DSR-12	Dynamic, supra-aural	20 Hz-22 kHz
AKG	K-141	Dynamic, supra-aural	20 Hz-20 kHz
BEYERDYNAMIC	DT330 II	Dynamic, supra-aural	15 Hz-18 kHz
YAMAHA	YHD-1	Orthodyn., supra-aural	20 Hz-20 kHz
PIONEER	SE-L90	Dynamic, supra-aural	10 Hz-22 kHz
SENNHEISER	HD414-SL	Dynamic, open	16 Hz-20 kHz
AUDIO-TECHNICA	ATH-V7	Dynamic, closed	20 Hz-20 kHz
AKG	K-145	Electrostatic/Dynamic	25 Hz-24 kHz
KOSS	Pro/4X Plus	Dynamic, closed	10 Hz-40 kHz
AKG	K-240M	Dynamic, closed	20 Hz-20 kHz
SENNHEISER	HD420-SL	Dynamic, open	18 Hz-20 kHz
SENNHEISER	HD222	Dynamic, closed	16 Hz-20 kHz

\$100-  
\$600

## HEADPHONES

AZDEN	DSR-38	Samarium cobalt	16 Hz-24 kHz
BEYERDYNAMIC	DT220	Dynamic, closed	20 Hz-20 kHz
AUDIO-TECHNICA	ATH-CD7	Dynamic, closed	20 Hz-20 kHz
BEYERDYNAMIC	DT550	Dynamic, supra-aural	10 Hz-22 kHz
SIGNET	TK21	Dynamic, supra-aural	20 Hz-20 kHz
AKG	K-240DF	Dynamic, closed	20 Hz-20 kHz
SONY	MDR-CD6	Dynamic, supra-aural	2 Hz-25 kHz
STAX	SR-34	Electret, enclosed	25 Hz-25 kHz
SIGNET	TK22	Dynamic, supra-aural	20 Hz-20 kHz
BEYERDYNAMIC	DT660 II	Dynamic, closed	15 Hz-25 kHz
SENNHEISER	HD430	Dynamic, open	16 Hz-20 kHz
BEYERDYNAMIC	DT880	Dynamic, supra-aural	5 Hz-25 kHz
BEYERDYNAMIC	DT770	Dynamic, closed	5 Hz-35 kHz
SENNHEISER	HD540	Dynamic, open	16 Hz-25 kHz
BEYERDYNAMIC	DT990	Dynamic, closed	5 Hz-35 kHz
BEYERDYNAMIC	DT880 Monitor	Dynamic, supra-aural	5 Hz-35 kHz
SENNHEISER	HD230	Dynamic, closed	10 Hz-20 kHz
AKG	K-340	Electrostatic, closed	15 Hz-25 kHz
BEYERDYNAMIC	DT880 Studio	Dynamic, supra-aural	5 Hz-35 kHz
STAX	Lambda Jr.	Electret, enclosed	20 Hz-25 kHz
STAX	SR-5N System	Electrostatic, enclosed	15 Hz-25 kHz
BEYERDYNAMIC	DT880 Mon.EF	Dynamic, closed	5 Hz-30 kHz
SIGNET	TK44	Electret, supra-aural	10 Hz-25 kHz
STAX	SR-Gamma	Electrostatic, enclosed	8 Hz-25 kHz
SENNHEISER	HDI 234 HiDyn	Dynamic, closed	20 Hz-20 kHz
STAX	SR-Lambda	Electrostatic, enclosed	8 Hz-35 kHz
STAX	SR-Sigma	Electrostatic, enclosed	30 Hz-35 kHz



IMPEDANCE (ohms)	WEIGHT (lbs.)	NOTES	SUGGESTED RETAIL PRICE
32	.25	Use with or without headband	25.00
25	2.5	10-foot cord, adaptor plug included	25.00
32	1.2	Foldable, adaptor included	27.00
200	1.2	1/4" and 1/8" plugs included	28.00
32	X	1/4" and 1/8" jack	28.95
4-16	1	1/8" jack, adaptor included	29.95
100	6.3	Like K/40LC without volume control	29.95
35	2	Temporal pad	29.95
32	X	Dual slide volume controls	29.95
32	2	Foam ear padding	29.95
30	0.6	1/8" jack, adaptor included	29.95
10	15	8.2-foot cord	29.95
32	5	Cloth and foam padding	29.95
32	0.25	Earbuds, 1/4" adaptor included	30.00
20	2.2	Felt ear pads	30.00
40	1.25	Foam ear padding	30.00
35	2.3	1/4" and 1/8" jack	34.95
32	.75	Collapsible to cassette size	35.00
100	6.7	Dual volume controls	39.95
60	3	Adjustable headband	39.95
30	0.6	1/8" jack, adaptor included	39.95
18	2	Reviewed in DA, 2/87	39.95
32	5	Vinyl padded earcups	39.95
45	3.7	Designed by Porche designers	40.00
200	4.5	Lightweight	45.00
32	5	1/4" plug, 1/8" adaptor included	45.00
32	2	1/8" plug, adaptor included	45.00
17	1.2	Foam ear pads	49.00
140	9.3	Adjustable headband	49.95
60	2.3	Reviewed in DA, 2/87	49.95
30	0.6	Volume controls	49.95
4-16	2.6	1/4" and 1/8" jack	50.00
32	2.75	Flat-disc diaphragm	50.00
45	3.4	Designed by Porche designers	50.00
32	3.5	Vinyl padded earcups	54.95
32	3.2	1/8" jack, adaptor included	54.95
200	4.4	9-foot cord	55.00
125	5.6	1/4" jack, 1/8" adaptor included	55.00
600	3	Foam ear pads	59.00
60	4.5	Adjustable headband	59.95
100	8.4	Reviewed in DA, 2/87	59.95
600	1.5	34mm diaphragm	60.00
60	3.8	50 ohm model available	60.00
60	3	Vinyl ear pads	60.00
4-16	3.3	1/8" jack, adaptor included	64.95
150	5.6	10-foot cord	65.00
4-16	2.2	Reviewed in DA, 2/87	65.00
60	5	Reviewed in DA, 2/87	69.95
100	13	Adjustable headband	70.00
300	6	Designed for CDs	70.00
200	4.25	Foam ear padding	70.00
600	6.9	10-foot cord	75.00
40	6.8	Full bass response	75.00
125	5.9	Reviewed in DA, 2/87	75.00
40	2.5	1/8" jack, adaptor included	79.95
600	2.6	Foam ear pads	84.00
4-16	6.5	High-impedance model available	84.95
200	6	10-foot cord	85.00
100	8.3	Dual element	85.00
600	8.5	High sensitivity rating	99.00
600	4.6	Foam ear pads	99.00
600	8.8	Vinyl padding	99.00
40	2.25	Accurately balanced design	100.00
400	9.3	Wideband transducers	105.00
35	9.5	Designed for CDs	109.95
600	7	Smooth frequency response curve	115.00
4-16	5	1/4" and 1/8" jack	120.00
600	8.5	Reviewed in DA, 2/87	125.00
45	3.9	Reviewed in DA, 2/87	129.95
8	8	Electret adaptor included	129.95
4-16	9.2	Reviewed in DA, 2/87	130.00
600	8.9	Bass reflex design	140.00
600	6.8	Vinyl padding	149.00
600	7	30 ohm model available	155.00
600	9	Studio Quality	160.00
600	5.9	Reviewed in DA, 2/87	169.00
600	8	Low-mass coil for low distortion	175.00
600	7	Good choice for studio work	185.00
600	9.2	Vinyl padding	189.00
400	13.5	10-foot cord	195.00
600	7	For pro or semi-pro applications	195.00
8	X	Electret adaptor included	199.95
8	13.9	Electrostatic adaptor included	249.95
600	7	Includes plug-in filter	295.00
4-32	7.9	Electret adaptor included	300.00
8	7.5	Electrostatic adaptor included, see DA, 2/87	349.95
X	X	Cordless system, volume controls	481.00
8	15.1	Electrostatic adaptor included	489.95
8	16.4	Electrostatic adaptor included	599.95

sound is reproduced by a thin membrane which functions as a capacitive element. The membrane is set in motion by variations in electrostatic fields induced by an applied audio signal. Electrostatic speakers and headphones require a power supply which provides a high voltage charge to its elements.

**Ergonomic**—Designed for ease of use (logically arranged buttons, comprehensible controls).

**Equalizer**—A stereo component, or part of an amplifier, that separates the spectrum of sound into several segments—called bands. The component allows you to adjust the strength of each band to suit your needs. Most common is the graphic equalizer which employs a series of sliders, and sometimes lights, to enable users to adjust levels more visually (graphically).

**Filter Type**—Some CD players use digital filters in addition to analog filters to smooth the audio waveform. We've marked those that do so with a "D" in this Buyer's Guide. Other players use analog filters entirely, and are marked with an "A."

**Frequency Response**—The range of frequencies over which a device can operate effectively. In an amplifier, it's the range that can be amplified; in a speaker, the range that can be reproduced. The human ear can hear frequencies as low as 20 Hz to as high as 20,000 Hz (20 kHz), so it's best if a stereo unit can produce somewhere near this range. Frequency response is meaningless unless a decibel (dB) range like  $\pm 3$  dB is also specified.

**Hum**—Unwanted low-frequency tone, usually caused by 60 Hz and its harmonics (leaking from the AC power source of the amp).

**H<sub>z</sub>**—An abbreviation of Hertz, a unit that expresses the number of complete cycles in a sound or electrical wave per second. The number of these cycles per second, or the number of Hertz, indicates the frequency of the wave. In an electrical wave, the higher the number of Hertz,



the higher the frequency. In sound waves, higher frequencies denote higher pitch: the note A at 440 Hz is the familiar pitch that an orchestra tunes to, a minor third below middle C on the piano keyboard. Also common is kHz, or kiloHertz. 1 kHz is equal to 1000 Hz. See Frequency Response.

**IHF**—Abbreviation for the Institute of High Fidelity, an audio industry governing body that has established standard measurement specifications for many performance parameters.

**IM**—Intermodulation Distortion. A measurement of the amount of undesired products created by the interaction of two pure tones. In amplifiers, IM distortion is expressed as a percentage of total output at a specified power level. The lower the IM percentage, the better.

**Infinite Baffle**—A loudspeaker design which prevents interaction between the forward radiating and backward radiating waves created by a driver (woofer or midrange).

**Integrated Amplifier**—An amplifier that incorporates power amplifier circuitry and pre-amplifier circuitry into one unit. Separate power amplifiers and pre-amplifiers are also available, but only integrated amps are listed in this guide.

**Laser pickup**—The assembly inside a CD player that reads information from the disc. Most common are the three-beam pickup and the one-beam pickup.

**Midrange**—The mid-sized driver present on some speakers. It's responsible for reproducing the middle frequencies sent from the amplifier. Speakers without midrange drivers divide midrange reproduction duties between the tweeter and the woofer.

**Multiplex Transmission**—The simultaneous transmission of two signals over a single channel. In audio, FM stereo is broadcast on a single radio frequency using frequency-division multiplexing. Some CD players employ a similar scheme to allow the

utilization of a single D/A converter for both stereo channels.

**Nominal Impedance**—

Resistance to the flow of alternating current, measured in ohms. A loudspeaker's impedance can vary substantially with the frequency of the alternating current (audio signal) applied to it, hence the term *nominal*.

**Open-air**—A headphone design that allows the listener to hear the outside environment.

**Oversampling**—A digital-to-analog conversion technique in which the digital signal is sampled more frequently than the CD format standard (44.1 kHz). The advantage of oversampling is a reduction in the amount of subsequent filtering required. Common oversampling frequencies are two- or four-times the standard.

**Passive Radiator**—A loudspeaker element that usually resembles a woofer minus any voice-coil or other active components. Passive radiators are used in bass-reflex-like enclosure designs in place of a port. Their function is to help control the frequency range over which bass reinforcement will occur.

**Power Bandwidth**—The frequency range over which a power amplifier will produce half its rated power output at its specified distortion level.

**Sensitivity**—Usually rated as dB SPL/at one watt/at one meter. A measurement of the sound pressure level a loudspeaker will produce when driven by a one watt signal and measured by a microphone placed one meter away. Sensitivity is an indicator only of loudspeaker efficiency, not of quality or accuracy.

**S/N Ratio**—Short for Signal-to-Noise Ratio, it measures the difference between the known amplitude of a test signal and the amplitude of unwanted noise components in an audio device. S/N Ratio is measured in decibels (dB). The higher the rating, the better.

**Subcode output**—The CD standard allows for a subcode track which runs next to the audio tracks. Hopes were that this subcode would carry video information, such as images or song lyrics, that could be displayed in sync with the music. Even though several players still have subcode output jacks, no CD manufacturers code their discs and apparently none plan to. Also, no decoder/demodulator is currently on the market (see "All About the Subcode Scam," *Digital Audio*, June 1986, pp.88-89).

**Supra-aural**—A headphone design in which the speaker unit rests on the ear, not around it (as with circumaural). Supra-aural headphones often use foam padding for comfort.

**THD**—Total Harmonic Distortion. A measurement of the amount of undesired harmonics added to a signal by a device. In amplifiers, THD is expressed as a percentage of total output at a specified power level. The lower the THD percentage, the better.

**Transducer**—Any device that converts an input signal into an output signal of a different form. In audio, phonograph cartridges and microphones are examples of transducers that convert mechanical movement to an electrical signal. Loudspeakers and headphones are examples of transducers that accomplish the reverse. A Compact Disc player's laser diode pickup assembly is a transducer that converts light information to an electronic signal.

**Tweeter**—Usually the smallest of the drivers present on a loudspeaker. The tweeter reproduces the high frequencies of an amplified sound.

**Watt (W)**—A unit of measure for electrical power.

**Watts/Channel**—See Continuous Power

**Woofer**—The largest of the drivers present on a loudspeaker. The woofer is responsible for reproducing the lower frequencies.





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# STATEMENT OF THE ART

Creating a truly musical loudspeaker is indeed an art—as much a product of mind, hands and heart as a painting or a piano sonata.

And, as in painting, there are different styles to this art. For example, there are Impressionistic speakers, where detail and focus are subordinated to a pursuit of atmosphere. Speakers that impose their vision of what we ought to hear through psycho-acoustic tricks can be thought of as Expressionistic.

We at Dahlquist confess to being realists.

Realism is what the new DQ-20 Phased Array™ is all about. We believe that the ultimate realization of the loudspeaker art must not express or suppress, only reveal—easily,

naturally and transparently—the music that flows through it.

Realism means music that retains its substance and form—with precise, stable imaging and open, airy, in-depth presentation of each individual instrument. It means human voices that are natural, with no artificial colorations to get in the way of true communication of content or emotion. The DQ-20 leaves music free—to touch and to move the listener.

Please take the opportunity soon to audition a pair of DQ-20 loudspeakers and hear for yourself that, at Dahlquist, the state-of-the-art is art that lets music make the statement.

## DAHLQUIST

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